Railway Age

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Highway Crossing Accidents Decline

THE nationwide campaign the American Railway Association and the individual railways are conducting to reduce accidents at highway crossings is bearing fruit. This is shown by the railway accident statistics for the entire year 1924 which were issued by the Interstate Commerce Commission last week and by statistics of the National Automobile Chamber of Commerce regarding the number of persons killed in automobile accidents last year. A very large majority of all fatalities at highway crossings are now due to collisions between trains and automobiles. The total number of persons killed at highway grade crossings in 1923 was 2,268, while in 1924 it was 2,149. This was not a large reduction, but in considering its significance it must be remembered that the number of automobiles being operated and the number of accidents of all kinds in which automobiles were involved substantially increased. The total number of persons killed in all automobile accidents in 1923 was 16,452, while in 1924 it was 17,345. Since the number of fatalities at highway crossings declined while the total number of fatal automobile accidents increased it necessarily follows that the proportion of all fatal automobile accidents which occurred at highway crossings was substantially reduced. There were reductions in fatal railway accidents of almost all kinds. The total number of persons killed declined from 7,385 in 1923 to 6,617 in 1924. Total trespassers killed declined from 2,819 to 2,621; total employees from 1,940 to 1,479. The number of passengers killed increased from 143 to 153, while the number of all other persons killed, consisting principally of those who met death at highway crossings, declined from 2,483 to 2,364. Particularly gratifying is the fact that the total of passengers killed in train accidents is one less than the unusually low record of 1923; 41 in 1924; 42 in 1923.

Uniform Crossing Warnings

THE New York State Public Service Commission proposes to do what it can to promote uniformity in automatic signals for giving warning at highway crossings of the approach of trains, and has given notice of a hearing to be held at Albany on April 16. The commission—with an eye, no doubt, to the rapid increase in the use of automatic warnings, and to the needs of the future—calls upon the railroads to show cause why a general order should not be issued prescribing a uniform type of signal. This is a highly commendable purpose; but how easy (or difficult) it may be to make actual progress is a rather complicated question. The desideratum is uniformity throughout the United States and Canada. That the automobile has made of the whole continent a single neighborhood is a truth, only slightly hyperbolized, which is now recognized everywhere. The authority of the sovereign state of New York, however, has not much influence, in a matter of this kind, in Florida, or Maine or Saskatchewan. But in the absence of effective action by the Federal government, or the National Association of Railroad Commissioners or the American Railway Association, no one can say that New York ought not to make a start. These three national organizations all alike labor under the drawback that either they have no effective authority or are too cautious or too weak to exercise it. Congress would have to move very slowly indeed. The railroad commissioners are not very strongly organized. The A. R. A. has extreme respect for the "particular conditions" of individual roads, which often seems to block progress. The force and logic of actual facts and conditions—set forth so that all may read and reflect—must be our principal reliance, and it may be that a state authority can turn some very useful light on the problems to be dealt with. New York railroads have a half dozen kinds of electric signals in use, and large numbers of them; and can give the commission all the information that it may need. The experience of the last 25 years with freight cars may offer a suggestion in the matter of standards; if a complete standard is not attainable, take good care to standardize as many features as possible. One state railroad commission recently received a loud complaint based on the use of a green light at a crossing. A single color standard certainly ought to be attainable; if only by arbitration (as between rival states or manufacturers or engineers).

Joint Facilities and Discipline

THE use of the same facilities, particularly running tracks and terminals, by more than one railroad gives rise to problems other than the accounting incident thereto. One of the most serious of these is the matter of supervision and discipline. The employee who is called upon to work not only on the lines of his own road, but on those of one or two others as well, is rather more than likely to feel that he is overburdened with superiors and, often enough, he is right. Discipline may be ever so stringent and yet, if administered with strict justice only after all the facts are known, will not bring a group of employees to the feeling that they are being unfairly dealt with. On the other hand, any hint of carelessness in administering it will sooner or later bring injustice and the employees will come to the conclusion that they are being persecuted. This situation, where employees work only on the lines of their own company, is, fortunately, self-corrective—the superiors of the officer who is careless in matters of discipline soon discover his failing and it is not to their advantage to permit it to pass unnoticed. This is not true in the case of joint facilities. If the officers of the A. B. & C. are careless or needlessly harsh in their disciplining of employees of the X. Y. & Z. who operate over their lines, then it is the X. Y. & Z. and not the offending road which is the loser when the morale of the X. Y. & Z. employees is thereby lowered.

This is no mere theoretical argument which we are advancing. The A. B. & C. is a real railroad and so is the X. Y. & Z. which operates trains over it. The A. B. & C. is not notoriously harsh with its own employees, but such is its reputation for treatment of X. Y. & Z. men that only those employees whose seniority will not permit them to take other runs will assume duties which oblige them to work over the A. B. & C. What should be done in a case of this kind? Well, in the first place it is the X. Y. & Z., which is the loser, and its officers should investigate carefully every disciplinary case in which its employees are involved and vigorously defend them when there is evidence that the action taken by the road operating the joint facilities is thoughtless, harsh or unfair. Something might be accomplished, too, by a properly directed appeal to the spirit of fair play. Let every officer who supervises employees of a road other than his own ask himself whether he is always as sympathetic and as careful in dealing with these men as he is with the employees of his own company. The test is: Do employees try to avoid duties which bring them under the jurisdiction of other than their own officers? If so, the fact is symptomatic of an unhealthy condition which cannot safely be disregarded.

How About Coal Traffic?

IS the history of railway traffic in 1924 to be repeated in 1925?

There were sharp declines in freight business and earnings in 1924 which began in March and from which no real recovery was made until September. They were started by the decline of coal shipments which commenced as soon as it was known there would be no coal strike in the union mines on April 1. This slump in coal shipments, which lasted for six months, mainly accounted for the substantial decline of total freight business in 1924. The amount of bituminous coal shipped in that year was 96,500,000 tons less than in 1923, a decline of 17 per cent.

The question whether the experience of 1924 is to be repeated in 1925 is being raised by some persons because in February and March of this year there was a decline in shipments of coal which made them less than they were in the same months of last year. To this was largely due the decline of both gross and net earnings in February.

The course of developments in the coal industry since the great coal strike in 1922 has been so different from what experience in earlier years indicated it would be that predictions regarding future developments in that field are hazardous. It can, however, do no harm to state certain facts and consider what conclusions they seem to suggest. If these facts and past experience mean anything, it is extremely difficult to draw from them the inference that the railways will this year suffer for months from lack of coal business as they did last year.

The amount of bituminous coal produced in the calendar year 1923 was 564,200,000 tons. As a result of this large production there were in storage on January 1, 1924, about 62 million tons. This exceeded all previous accumulated stocks except on Armistice Day, and on April 1, 1922, when the great coal strike began. In the first eight months of 1924 consumption exceeded production. The latest date for which the United States Geological Survey has compiled statistics regarding the amount in storage is September 1, 1924, and at that time it was 56 million tons.

What has occurred since then? During the last four months of 1924 general business activity was at least as great as in the corresponding months of 1923, but the amount of bituminous coal produced in these months was 6,700,000 tons less than in the corresponding months of 1923. Owing to this smaller production there is strong reason to believe that the amount stored on January 1, 1925, was no larger than on September 1, 1924. Again, between January 1 and April 1, 1925, general business was at least as active as last year, but the amount of coal produced was 9,000,000 tons less than in the corresponding part of last year. It would appear, therefore, that on January 1, 1925, the amount of coal stored must have been only about 47 million tons, or 15 million tons less than on January 1, 1924, and that, because of the continued relatively small production in the first three months of this year, there must have been approximately 24 million tons less in storage on April 1, 1925, than on April 1, 1924.

The amount of bituminous coal produced between April 1 and September 1, 1924, was 78 million tons less than in the corresponding five months of 1923. Even though general business during the next five months should be only as active, and the consumption of coal only as large, as during the same part of last year, the large reduction in the probable amount in storage on April 1 should protect the roads from any such severe slump in coal traffic as occurred during this part of last year. The large production and shipments of coal in 1923 were greatly due to heavy depletion of storage supplies by the coal strike in the previous year. Apparently, however, the amount in storage on April 1, 1925, was little, if any larger than on April 1, 1923. It does not seem probable shipments of coal will be as large during the rest of 1925 as during the corresponding part of 1923, but all conditions do seem to forecast substantially larger shipments during the rest of this year than during the last two-thirds of last year. This is a matter of real importance because the volume of coal traffic so largely determines total freight tonnage and earnings.

It must be conceded, however, that the present situation with respect to coal is a puzzling one. The average amount of bituminous coal produced annually in the post-war years ending with 1923 was 487,300,000 tons. This period included the years of the two great coal strikes—1919 and 1922—and also 1921, a year of the most profound depression in a third of a century. Nevertheless, the amount of bituminous coal produced in 1924 was 16,600,000 tons less than the annual average for these five years, and in the first quarter of this year production was 6½ per cent less than in the first quarter of last year. To what extent has this decline in the production of coal been caused by increased efficiency in its use and the substitution of other fuels? To what extent has the decline in production thus far this year been due to the fact that the public has been alarmed in the past by warnings of coal shortages that never came, and that it is postponing purchases which it has made earlier in past years, and which it is expedient should be made early in every year? It seems probable the decline in production thus far this year is mainly due to the last mentioned cause.

There has been a marked reversal of conditions in recent years with respect to the transportation of coal. For years coal mine operators constantly reported inability to work the mines to capacity owing to "car shortage." Because of improved distribution and handling of cars and increase in their number and capacity, and of decline in the production of coal, mine operators no longer report car shortages, while the railways constantly report large coal car surpluses. It is a matter for speculation how long these conditions would exist if a real "boom" in business should come. It is probable those who now confidently postpone purchases of coal they formerly made

early in the year and carry much smaller stocks in storage would, if a "boom" came, encounter the same old difficulties in getting coal owing to so-called "car shortage." But the often predicted large increase in general business activity does not come, and the railways continue to show large surpluses of coal cars.

The College Man in Railway Engineering

THE discussions of the college man in railway service which have appeared in these columns in recent issues have approached the subject almost entirely from one angle, namely, that of its bearing on the development of the railway officers of the future. Whether or not the railroads will be successful in producing enough high caliber executives without recourse to a forward looking plan that will make a definite number of college graduates available for administrative positions, one thing is certain, that the railroads must employ technically trained men of a superior class in strictly technical positions.

The usefulness of the trained engineer in railway service has long been recognized. In fact, there was a time when railroad construction afforded almost the only large field for the employment of technical graduates. The period of extensive railroad construction is closed and in its place we are now in the midst of an intensive development which presents problems much more intricate and far more diversified, all of which entail the application of thorough technical knowledge, much of it highly specialized. This condition is not peculiar to the railroads since it pervades our entire industrial life and no industrial concern can survive unless it keeps abreast with progress in the application of scientific knowledge.

Whereas railroad construction and maintenance were once of so limited a scope that one man could readily master practically all scientific knowledge of definite application thereto, the field has become so broad and the knowledge so detailed and voluminous that this is now impossible. In the early days of railroading scientific study was concerned only with the economics of railway location and the design of bridges. All else was a matter of rule-of-thumb. Today the subject of economics has been extended to cover every branch of railway transportation while bridge engineering has been greatly extended and subdivided. The steam locomotive has become a highly complicated machine and its maintenance involves the use of tools no less intricate. The treatment of water and the preservation of timber entail a knowledge of chemistry. Hydraulics plays an important part in the handling of water service, while coaling stations, water stations and work equipment call for a highly developed knowledge of mechanical and electrical engineering. Railway buildings have developed a specialized technique of their own. In fact, there is almost no branch of railway operation or maintenance that does not embody some phase of applied science.

Clearly, therefore, the railroads are more in need of well-trained engineers than ever before and if they do not take steps to recruit men of high character with thorough engineering training they will be unable to take full advantage of the scientific developments definitely applicable to the industry. The problem of obtaining qualified men is a broad one. It involves facilities for employment that will insure the recruiting of the most capable men. It gives rise to the perplexing question which is now confronting the engineering school, that of the relative merits of general and specialized training. This is a matter which cannot be settled until the universities and the railroads develop a closer contact. In the end, however, the most pertinent problem is that of the attractiveness of railway employment for the technical graduate and this naturally focuses on the opportunities for advancement.

The employment of men is rapidly becoming a matter of supply and demand. It is one thing to hire a boy who has nothing to offer but a high-school education and such evidences of character as point to high standing manhood. It is another matter to employ a technically trained man selected by a skilled personnel officer who knows ability when he sees it. From the standpoint of pure business, the inducements which must be offered in the one instance are entirely different from those which must be tendered in the other. If there are not enough higher positions in the strictly engineering service to afford advancement for a reasonable number of the junior engineers, then the railroads are confronted with another reason for providing an outlet for the engineer in the higher administrative positions.

To Make the International Congresses More Effective

THE International Railway Congress Association is the only existing organization for bringing railway men the world over into contact with each other. They need this contact to a far greater degree than they now enjoy it. There is no more reason why the science of railroading should be restricted by distance and by international boundaries than there is for similar restrictions on the science of medicine. Railroad men who are leaders in the field in the various countries of the world could profit by becoming acquainted with men holding similar positions elsewhere, the same as astronomers or engineers benefit by following the accomplishments of their fellows in foreign lands. Yet the fact remains that scientists and professional men in almost every field are in closer contact with their fellows abroad than are railroad men. Why is this? Are railroad men more provincial than other professional men? Are they more content with traditional methods and practices? Are they inclined to be contemptuous of the accomplishments of foreign countries in railway progress?

The *Railway Age* does not think so. We think that the fault, if there is any fault, lies more with the International Railway Congress Association than with railway men themselves. The policy of the association has not been in the past of a character to appeal as strongly as it might to the railroad men of the world. Why? In the first place, as we have remarked before, the majority of the railroads of the world are operated by English-speaking people—but French, not English, is the official language of the association. English-speaking railroad men are not given the position in the association to which their numbers entitle them. In the second place, Germany and Austria are not included in the membership of the association at all. Yet these countries are very active in railway improvement; and we doubt whether any other Continental European country could possibly have displayed so many recent contributions to railway technical betterment as were shown at the German railway congress at Berlin last autumn.

The *Railway Age* wishes the International Railway Congress Association well and has consistently urged a larger participation of English-speaking railroad men in

its deliberations, even as it is at present conducted. But, in all friendliness, we cannot refrain from pointing out that, if those who control the destinies of the association are really interested in making it as effective as it should be, they must prepare to make it more truly representative. They should invite the participation, whether as formal members or not, of all countries which are important from a railroad standpoint. They should be willing to grant a place in the association to English-speaking nations worthy of their importance in the railroad world.

What is a "Fair Return"?

THE prices of railway stocks on the stock exchange are of interest and importance to speculators and investors, but they are of more importance to the public. For some years the railways have been raising by the sale of bonds and other evidences of indebtedness practically all the capital invested by them in additions to and improvements in their properties. If they should continue to do this much longer the excessive increase in their fixed charges finally would result in their general bankruptcy.

The only other way to raise more capital is by the sale of stock. They cannot raise capital thus unless they can sell stock at par or more than par. After the election there was a general advance in prices of railway stocks. Recently there has been a sharp recession. Experience indicates that hardly any railway could sell now new stock at par or more unless investors believed it could pay at least 7 per cent on it. The net income the roads have had for a long period of years makes it possible for only a few to give investors confidence that they will be able to pay this large a dividend. Therefore, until their net income increases and a policy of regulation is adopted which will justify the expectation that it will be maintained on a higher basis few railways will be able to sell new stock.

The reason why the net income of most roads has been so inadequate is obvious enough. The Interstate Commerce Commission held that until March 1, 1922, the railways were entitled to earn 6 per cent, and later held that they would subsequently be entitled to earn 5¾ per cent, on their tentative valuation. This would have given them an average return from September 1, 1920, when the government guarantees were withdrawn, to December 31, 1924, of 5.84 per cent. Allowing for the increase in investment in railway property since the end of 1919 the average return earned by the Class I roads on their tentative valuation in the four years and four months ending on December 31, 1924, was approximately 4.33 per cent. Even in 1923 and 1924 the average earned on tentative valuation was only about 5.1 per cent. This is a sufficient explanation of why the net income of most roads has been very inadequate. It mainly explains why investors have not been given enough confidence in railway stocks to make it possible to sell many of them to raise new capital. Whether, if the return the commission has held would be fair had been earned, it would have been possible within recent years to have sold a large amount of railway stocks nobody knows. It is certain, however, that if as a whole the roads had earned a "fair return" the prices commanded by their stocks would have been much higher and more companies could have issued them. Whether a return of 5¾ per cent on the tentative valuation would be adequate can be decided only by letting them earn it, and this test has never yet been made.

It happens, however, that the returns earned by railways in different territories have been unequal. The railways of southern territory in 1923 and 1924 earned approximately 6 per cent on their tentative valuation. In consequence intimations have come from some quarters that their rates ought to be reduced. This raises a question of great importance which must be met squarely. While the return earned by the southern roads on their tentative valuation within the last two years has been about 6 per cent, the average return earned by them on this basis in the four years, 1921-1924 inclusive, averaged less than 5 per cent. This being the case, does the fact that recently they apparently have been earning more than 5¾ per cent warrant the suggestion that their rates should be reduced? This suggestion could be based only on one theory, viz., that the so-called "fair return" is the maximum that the railways in each territorial group should be allowed to earn in any year.

There are three different theories regarding "fair return" which may conceivably be advanced. One of these is that just mentioned—that it is the maximum the railways should be allowed to earn in any year; another, that it is the minimum to which they should be restricted in any year, and another that it is an average they should be allowed to earn for periods of years. The railways do not accept the tentative valuation of the commission without protest. They believe it is too small. Whatever a fair valuation would be, however, the same question regarding the return they should be allowed to earn on it, year by year, arises.

The theory that the "fair return" should be a maximum cannot be logically accepted on either legal or economic grounds. Under the federal constitution as interpreted by the courts a fair return is the amount public service concerns must be allowed to earn to avoid confiscation of their property. Let us assume 5¾ per cent marks the limit where confiscation begins. In that case if this percentage were accepted as a maximum, the railways would be allowed to earn it only in exceptionally good years, and in all other years the rates they were allowed to charge would be confiscatory because the return earned by them in these years would fall below the line of confiscation.

But the Interstate Commerce Commission is not a court with the duty of determining merely whether rates are confiscatory. It is an administrative body specifically charged by Congress with the duty of determining what return the railways must be allowed to earn in order permanently to provide adequate transportation. Therefore, if it is to comply with the law it must determine on economic grounds the return the public welfare requires the railways shall earn, and let them earn it. Now, presumably acting in this capacity and for this purpose, the commission has ruled that the railways should be allowed to earn 5¾ per cent. If its ruling is based on sound economic grounds it cannot treat 5¾ per cent as a maximum because this would result in the railways earning less than this in most years; and on the commission's own reasoning this would prevent them from adequately enlarging and improving their facilities and thereby defeat the purpose of the law under which it acts.

If 5¾ per cent marks the limit of confiscation, probably the constitution does not require this to be treated as a minimum, because then the result would be that in most years the railways would earn more than that to which they can be constitutionally restricted. Likewise, if on economic grounds 5¾ per cent is the return required there is no good reason why it should be treated as a minimum because in that case the roads would in most years earn more than the public welfare required.

It would appear, on both legal and economic grounds, that the words "fair return" must mean an average return

earned for periods of years which would not be low enough to be confiscatory; which would be high enough to enable the railways to raise sufficient capital by the sale of bonds and stocks in reasonable proportions; and which would not be high enough to enable the carriers to collect from the public more than it was in the public's own interest to pay. Any other conclusion would justify a policy of regulation which would be inimical to the public welfare, although it is the sole purpose of regulation to promote the public welfare.

It is difficult to conceive how any fair and reasonable mind could reject this conclusion. If it is sound its application to the present railway situation is obvious. For over four years, because of disregard of sound principles, the railways as a whole, and each large territorial group of them, have had rates fixed for them on which they have earned much less net return than they have been constitutionally entitled to and than the public welfare demands they should earn. The result is that the confidence of investors in railway securities, which had been so largely destroyed, has not been restored. The prices for which railway securities are bought and sold are still far below their pre-war level. Prices of stocks especially are still so low that very few companies would dare try to market new issues. Either widespread railroad bankruptcy or an almost complete cessation of railroad development and improvement must be the result if this condition is not changed. The only reasonable way to change it is to let the railways for some years earn not only the so-called "fair return," but enough in excess of it to make up a large part or all of the deficiency in fair return which has accumulated and which amounted in the four years and four months ending December 31, 1924, to no less than 1¼ billion dollars. Nothing can restore the confidence of investors in railway securities except a policy of regulation which will give them tangible assurance in the form of adequate net operating income actually earned, not merely in one year or two years, but for long periods of years, that the railways will be allowed to earn a fair average return.

To begin to talk, as soon as some group of roads apparently commences to earn a "fair return," about reducing its rates, as if the "fair return" were a maximum, is to start an agitation the success of which would complete the destruction of public confidence in railway securities. On the basis of present earnings and expenses it would make a difference of less than 4 per cent in rates whether the traveling or shipping public should pay the railways enough to enable them to earn an average of 5 per cent or 6 per cent on their tentative valuation. This difference in rates and net return might easily, however, make the difference between the success and failure of the Transportation Act, and between the success of private ownership and the impossibility of avoiding government ownership.

Articles in the April Railway Mechanical Engineer

German State Railway's Brake Tests. An account of the tests made during 1924 by the German State Railways of the Westinghouse quick-acting and Kunze-Knorr air brakes. Page 209.

Precipitation of Water in Compressed Air Systems, by D. W. Lloyd, assistant to general manager, Westinghouse Air Brake Company, New York. An abstract of a paper read before the Manhattan Air Brake Club, New York, February 20, 1925, discussing the proper amount of radiation for compressed air cooling required under different operating conditions. Page 215.

The Prevention of Hot Boxes, by T. O. Quinn, Cleveland, Ohio. A discussion of the various causes leading to hot box epidemics. A number of remedies are suggested. Page 217.

Case Carburizing and Hardening Valve Motion Parts, by J. E. Burns, Jr., member, research staff, E. F. Houghton & Co. An article discussing the various factors relative to the carburizing or cementation of steel for valve motion work. Page 231.

Repairing Driving Boxes in the Average Size Shop, by H. H. Henson, machine shop foreman, Southern, Chattanooga, Tenn. Contains a number of constructive suggestions relative to repairing driving boxes in the average size machine shop. Page 236.

Economies Effected by the Use of High Purity Oxygen, by John J. Crowe and George L. Walker, engineer and assistant engineer, respectively, of the apparatus research and development department, Air Reduction Sales Company. Abstract of a paper presented at the February 16, meeting of the American Welding Society, discussing the results of tests showing the effect on the consumption of gas, of the purity of the oxygen used. Page 239.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Boise, Idaho, Yesterday and Today, by Union Pacific Railroad. 23 p. Pub. by Union Pacific System, Omaha, Neb.

Die Eisenbahn im Bild, by John Fuhlberg-Horst. 2 vol. Pub. by Dieck & Co., Stuttgart. (Printed in German.)

Judicial Proceedings Respecting the Constitutional Validity of the Industrial Disputes Investigation Act, 1907, and Amendments of 1910, 1918 and 1920. Toronto Electric Commissioners vs. Snider et al. Canadian Department of Labor. 304 p. Pub. by F. A. Acland, Ottawa.

Public Ownership. A Survey of Public Enterprises, State and Federal, in the United States and Elsewhere, by Carl D. Thompson. 463 p. Pub. by T. Y. Crowell, New York. $3.

Railways of Central America and the West Indies, by W. Rodney Long. 376 p. Pub. by Government Printing Office, Washington, 1925. 70 cents.

Periodicals

Awards and Decisions of Railroad Labor Board. Monthly Labor Review. March, 1925. p. 114-116.

A Chance for a Harriman. Dropping the War Jinx in Commercial Aviation, by Col. H. E. Hartney. Independent. March 28, 1925. p. 355-56, 364.

Panama Canal Turns Railroad Map Topsy-Turvy, by Agnes C. Laut. Forbes. April 1, 1925. p. 818-819, 838.

Productivity and Efficiency of Labor. Railroad Labor's Accomplishment, 1922 and 1923. Monthly Labor Review. March, 1925. p. 92-95.

Ramsay Condensing Turbo-Electric Locomotive, by George F. Jones and T. Laurence Hale. Discussion. Mechanical Engineering. April, 1925. p. 235-242.

Letters to the Editor

[The RAILWAY AGE *welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about* 250 *words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]*

Railroad Versus Motor Truck Transportation

HEATH, Mass.

TO THE EDITOR:

A good many branch lines have ceased or are about to cease operation and in some cases road transport has been substituted. In handling local freight in certain localities this may be economically sound. However, there is the possibility of the tax on trucks being increased commensurate with the wear caused on the highway. Even if this should not occur, rail transportation may be cheaper for several reasons. Among them are:

(1) The friction of metal to metal of a railway is less than any kind of tire on a hard road. (2) In an undulating country usually more power is required for road transport, because the power consumed in climbing a hill is often not compensated by the descent, as the brakes must be used. On a railway the grades are easier and many can be coasted with little or no application of brakes, thus reclaiming the energy consumed in climbing. (3) The distance by rail is in most cases less than by road.

Other points in which a railway could excel road service are: (1) Speed. No hindrance from other traffic. (2) Punctuality, for the same reason. (3) Comfort, particularly riding qualities.

W. G. LANDON.

What is Wrong with the College Man?

LOUISVILLE, Ky.

TO THE EDITOR:

Referring to your editorial on page 729 of the March 14 issue under the caption "Do Railroads Want College Men?"

Pardon me for presuming to quote from your article what appears to me is the answer to your own question: "While at college he worked for railroads during four summer vacations, one vacation each as a *track man, brakeman, fireman* and *shopman.*"

The question is—if this young man really desired to take up railroading as his life's work—why did he not select the branch of the service that looked the most promising to him for future advancement, or that he preferred for other reasons, and specialize in that particular department rather than change each season from one department to another? Would not any young man, with or without a college training, have had the same experience? Railroading is a highly specialized departmental organization divided as follows: Executive, operating, traffic, accounting, engineering, mechanical and their several branches on down the line. It, therefore, follows that a young man with a sincere desire to become a railroad man should enter one or the other of these departments in a subordinate capacity and work himself up the ladder in the department of his choice, or that appears to hold out the best prospects for the future, and stick to it. This is the history of all of the eminent railroad men in this country. The man who tries to learn it all by jumping around from one department to another never gets anywhere. It is time enough later on to get a working knowledge of other departments.

One of the most difficult problems that the departmental heads of the railroads have to deal with is to convince a college trained man without experience that he must start in at the bottom in order to gain the practical training absolutely essential to his future success. It is conceded, of course, that a college or technical training should enable a young man to make better headway than one without these advantages. This principle was recognized in the mechanical department when the rule was adopted providing for a three-year term for special apprentices with technical training as compared with four years for a man who has not enjoyed the advantages of a technical training.

The trouble is that college men, as a rule, want to start higher up on the ladder than the other fellow instead of starting at the same place and climbing faster. This is not always the fault of the boys, as parents and others have been known to encourage this attitude and it is no easy matter to convince them to the contrary.

C. F. GILES,
Superintendent Machinery, Louisville & Nashville.

Good Committee Work

NEW YORK CITY.

TO THE EDITOR:

I am pleased to see the leading editorial in your issue of April 4, "An Unusual Record," noticing the fine work done by the committees of The American Railway Engineering Association, of which association I have been a member many years. When one considers the enormous amount of work involved in hunting up the men to do the class of work that is required on such committees, and getting the working members in line, it is gratifying to observe how quickly the information has been distributed and the men started in their work.

The Signal Section of the American Railway Association can, however, boast of much more prompt action. We have been operating for many years under a schedule whereby we proof-print all committee memberships and assignments and have them handled through the committees' committee and through the committee of direction so expeditiously that they can be approved at once by the committee of direction, which starts to function immediately after the close of the session.

This year that committee was called immediately after the close of the meeting on March 13, and committee assignments and memberships were so adjusted that they were available for distribution through the United States mail by the individual member roads on the morning of March 16. There have already been meetings held of these committees.

Careful planing will conserve all the time possible for the men interested in association work, and at the same time it saves mileage and time for the railroads.

H. S. BALLIET,
Secretary, Signal Section, A. R. A.

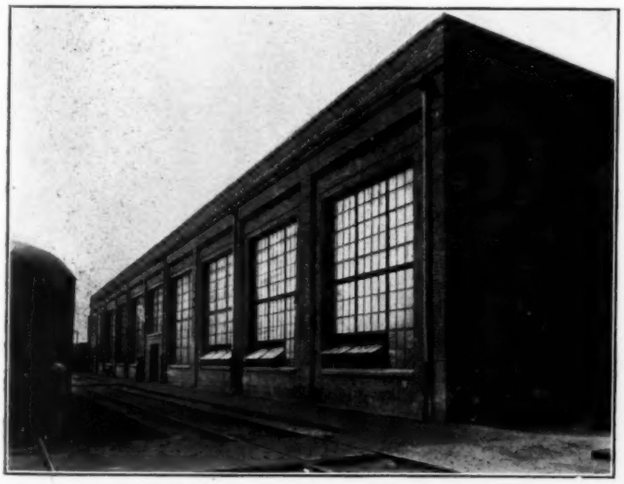
THE LEGISLATURE OF MISSOURI has passed a bill providing that water glasses must be so placed on locomotives that both the engineman and fireman will be able to see the water level from their seats.

The Shops Are of Permanent and Fireproof Construction

Central of Georgia Coach Shops Have Efficient Layout

Two-level construction proves advantageous in new repair facilities at Savannah, Ga.

THE Central of Georgia has recently placed in operation at Savannah, Ga., a new passenger coach and paint shop of interesting design to replace the facilities destroyed by fire in November, 1923. The new shops include modern arrangements for the handling of cars within the shops and the work upon them and in addition provide a separate or basement level for the more advantageous use of those trades in car repairing which are normally located in the main shop area. The basement level likewise provides for a large amount of storage space not usually available in coach and paint shops. The new unit is of modern construction and is well-lighted and equipped. As this road operates its own sleeping cars, provision has been made for the renovation and repair of this type of car as well as for all classes of repairs on the other types of passenger equipment.

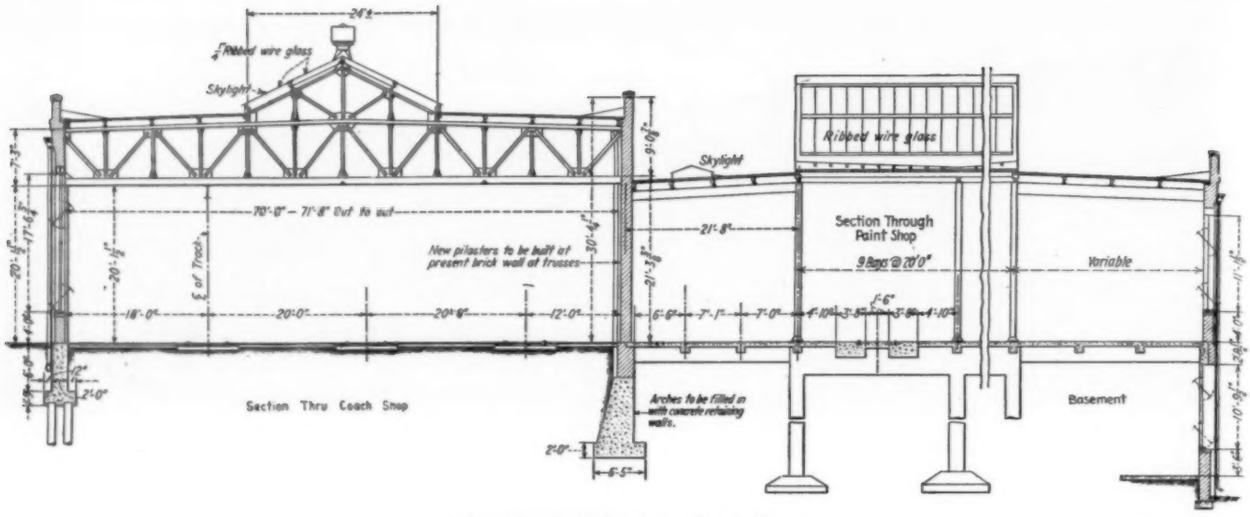


The Truck Yard and the Outside Wall of the Coach Shop

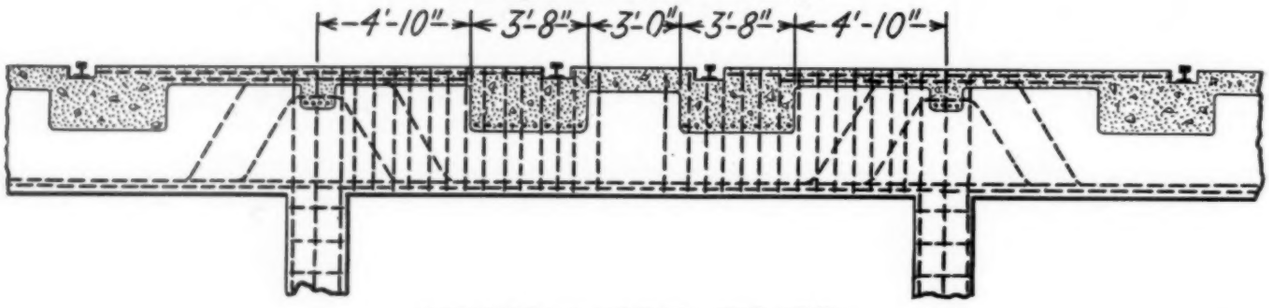
Two-Level Construction Provides an Economical Layout

The new shops are located on the area formerly occupied by the old unit with streets on two sides, the old transfer table on a third and a three-track truck yard on the fourth. In rebuilding the coach and paint shops, the old transfer table was continued in use, but was lengthened better to accommodate the longer cars now in service. The ground upon which the old plant was located is a hillside, with the main shop and terminal facilities located on a level approximately 20 ft. above that of the adjacent streets. This necessitated the supporting of the major part of the old structure on high brick piers and timber posts to obviate an exceedingly heavy expense for filling. The same problem of expense for filling was met again

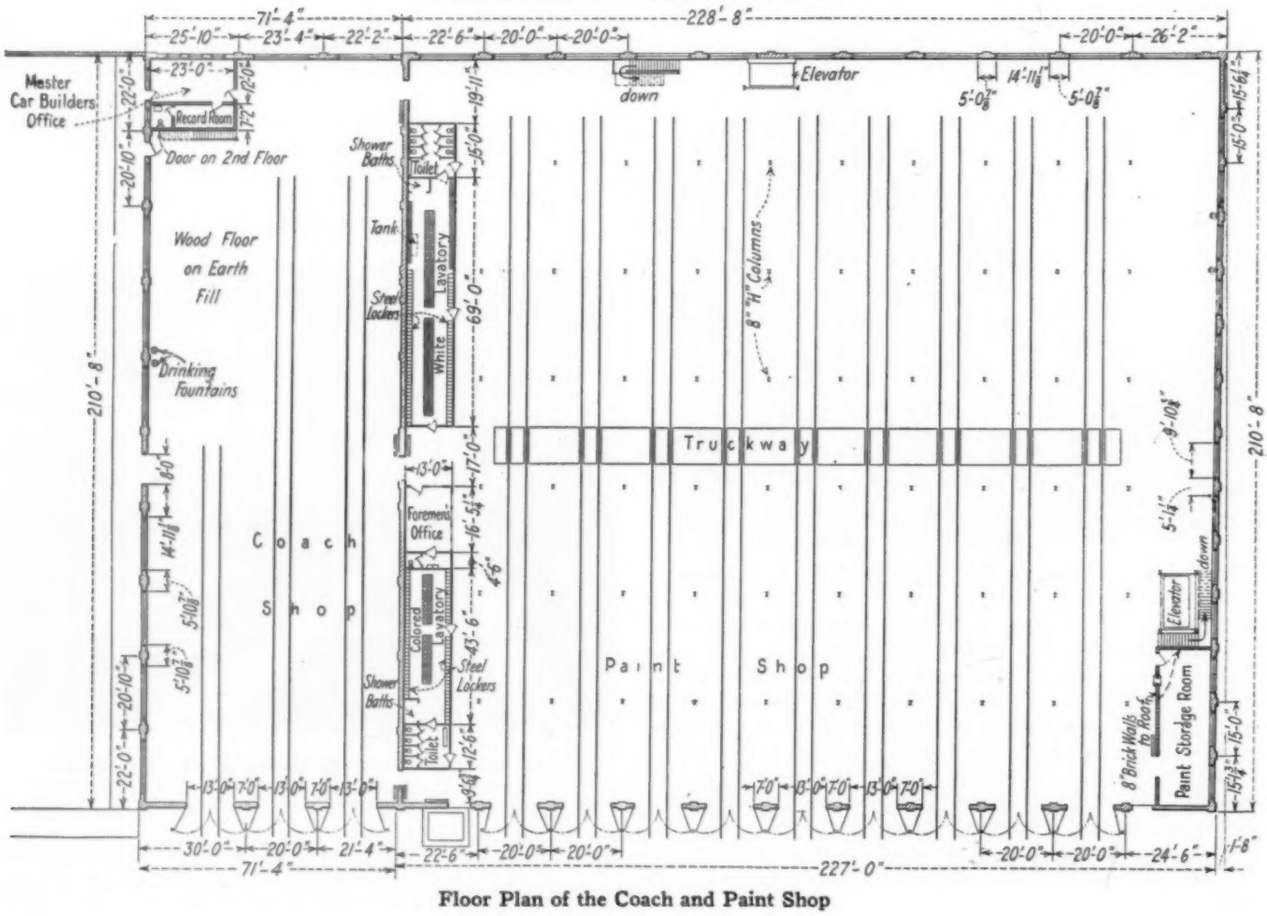
The Heating Conduits Are Shown in This View of the Lavatory



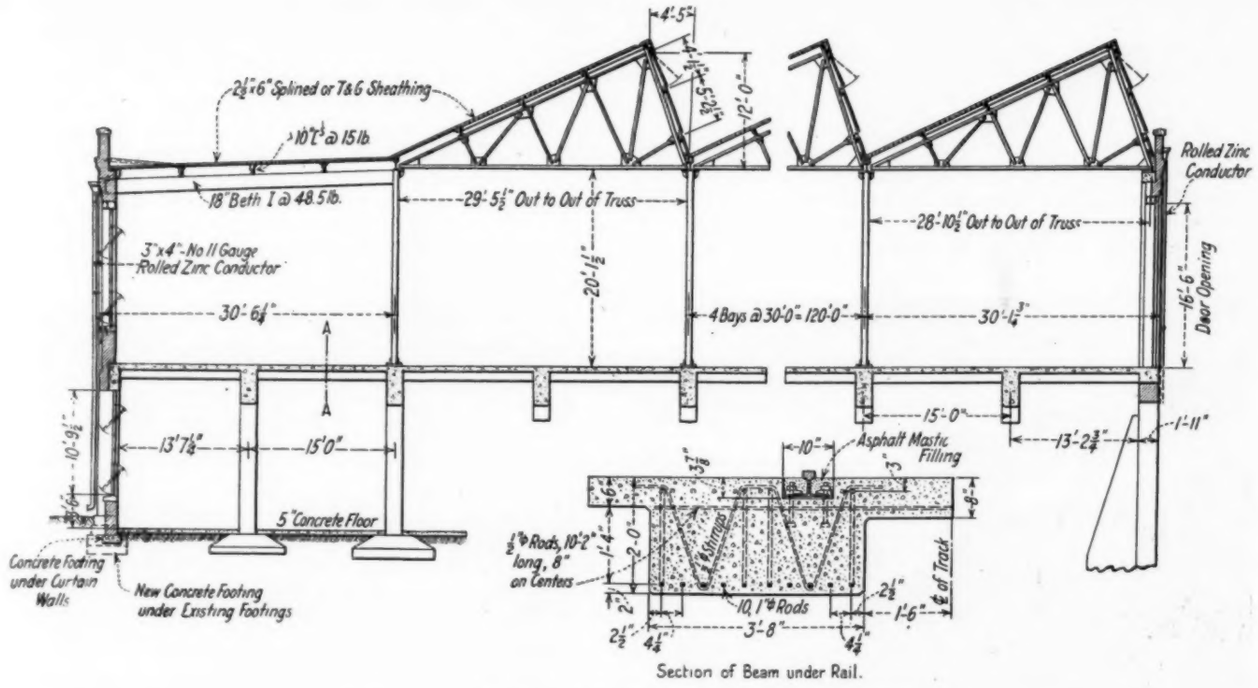
A Longitudinal Section of the Shops



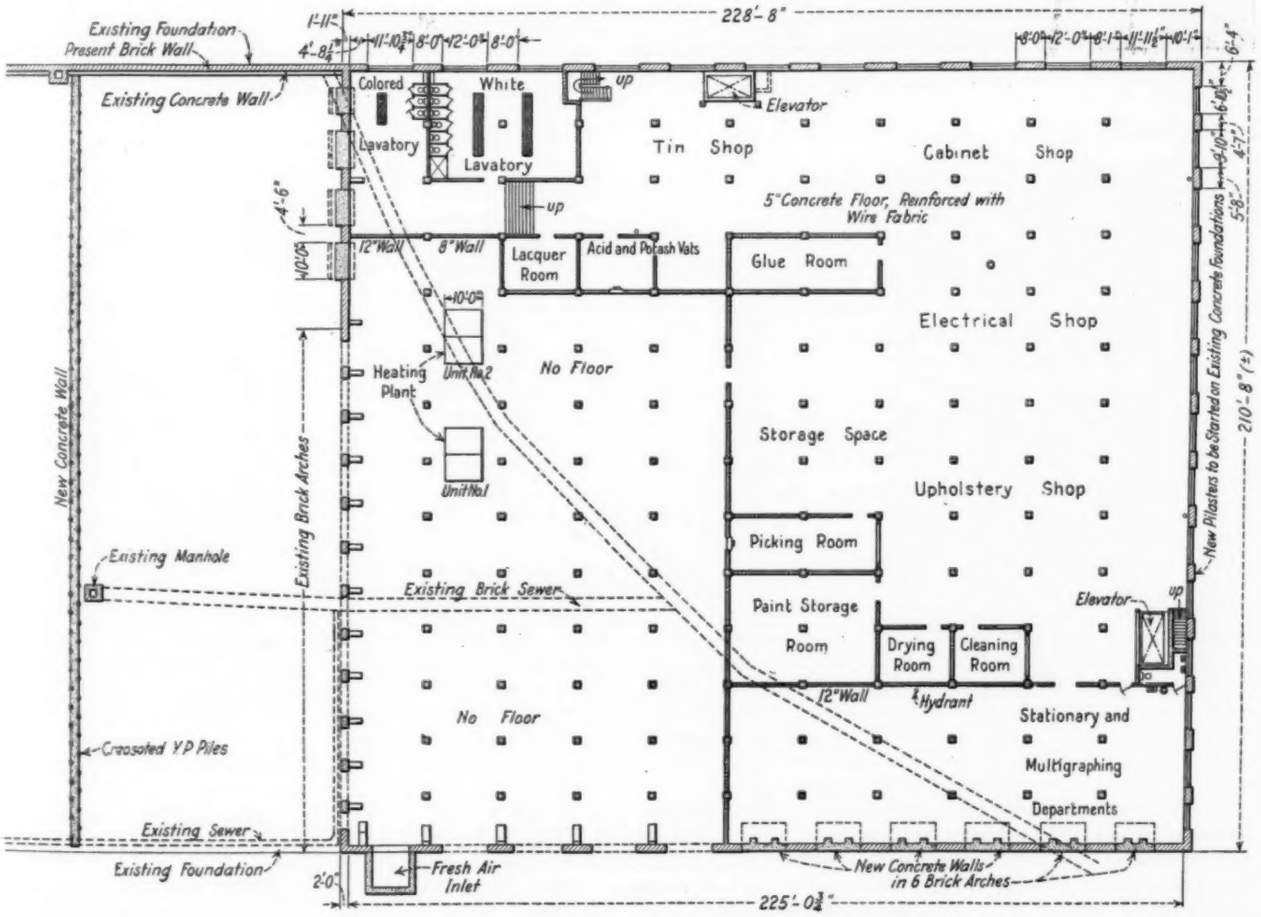
A Typical Beam and Section Under Rails



Floor Plan of the Coach and Paint Shop



A Transverse Section of the Shops and Beam Under Rail



Basement Floor Plan of the Paint Shop

when the plans for the new units were being made. An analysis of the costs showed that the supported floor structure was the cheaper type of construction and also had the additional advantage of making available a large amount of much needed floor area through the utilization of the space below the paint shop tracks. Accordingly a design providing for the use of this otherwise waste space was prepared and the building erected. Since there were streets on two sides of the shop site and at a level corresponding to that desired for the basement floor, it was possible to secure ample natural light and ventilation over practically all of the area that it was desired to use.

An Interior of the Paint Shop Before the Scaffolding Supports Were Erected

The unit consists of a coach shop and a paint shop forming one structure; it is 300 ft. long by 210 ft. 8 in. wide. The two sections are separated by a fire wall, making the coach shop 71 ft. 4 in. by 210 ft. 8 in. and the paint shop 228 ft. 8 in. by 210 ft. 8 in. The construction includes brick walls on concrete foundations, steel sash windows, wooden doors, and a steel superstructure. The coach shop was built on filled ground and was supported by a part of the old foundations, in addition to which there was a new pile-supported, reinforced concrete foundation under the outside long wall.

The foundations for the walls of the paint shop consisted in part of the old paint shop foundations which were reconstructed or reinforced to conform to the new design. A large part of these old foundations were in the form of brick arches which gave the sub-structure of the old unit a finished appearance. Along the street sides these arches were removed where the old brick walls were to be retained, and steel sash windows built into these sections. New footings and reinforced concrete beams were constructed where necessary and the new outer walls built on them. Most of the old arches under the other two sides were left open, being reinforced where necessary to withstand the additional loads. Those arches adjoining the basement area which was to be utilized were filled in with concrete in order to give an unbroken wall.

The floor structure of the paint shop was of reinforced concrete girder and column construction. The columns were 1 ft. 8 in. by 1 ft. 10 in. in size, reinforced and carried on concrete footings 8 ft. 6 in. square. They were spaced 20 ft. center to center longitudinally and 15 ft. transversely. The floor structure consisted of longitudinal reinforced concrete beams over each row of columns, measuring 1 ft. 8 in. wide by 4 ft. deep, and transverse reinforced concrete girders under each rail and over each column row, all poured integrally and with the flooring proper, which was of concrete 6 in. thick. This type of construction was found necessary because of the extremely concentrated loads which result when modern heavy equipment is jacked up. Jacking also introduced an eccentricity of loading around the rail which was provided for by the use of a beam of a width greater than that which would be necessary if the loading was confined to one point only. These beams have an effective depth of 2 ft. and a width of 3 ft. 8 in. The intermediate beams are 18 in. deep and 12 in. wide.

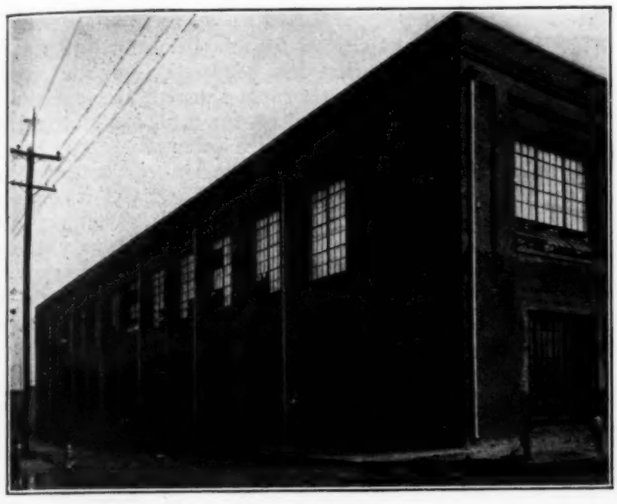
Roof Design Gives Excellent Light

The roof structure of the paint shop is of the saw-tooth type with the lines of skylights approximately 180 ft. long at right angles to the center lines of the tracks. This arrangement gives excellent natural light on both sides of the cars without shadows or dark sides. From the transfer table side there are seven saw-tooth bays of 30 ft. each and one 30 ft. 6¼ in. bay of the flat roof type. The superstructure is of steel, carrying a timber roof construction sheathed with tin on the saw-tooth sections and finished with Barrett roofing on the flat sections. The roof columns are of steel, spaced on 30 ft. centers transversely and 15 ft. longitudinally.

The roof structure of the coach shop consists of steel trusses spanning the full width of the shop and carrying a double skylight 24 ft. wide and approximately 168 ft. long. The roofing is Barrett specification. The clearance to the bottom of the trusses is 20 ft. 1½ in. This section contains two full length and one short track upon which all heavy coach repair work is done. In addition to the machine tool installation this section is equipped with a motor-driven trolley hoist operating the full length of the building. The office of the master car builder, a record room and a reading room for apprentices are also located in this section, the latter room forming a second floor over the office and record room.

The paint shop, which is also used for light repairs, is separated from the coach shop by a fire wall and contains 9 tracks, each approximately 190 ft. long. The

arrangement is such that open areas have been provided along the walls on all sides except at the doors to the transfer table. The section along the fire wall has been utilized for the lavatory, toilet, shower bath and locker facilities for the shop employees, with separate installations for white and colored employees. These facilities are separated from the main shop area by a partition about



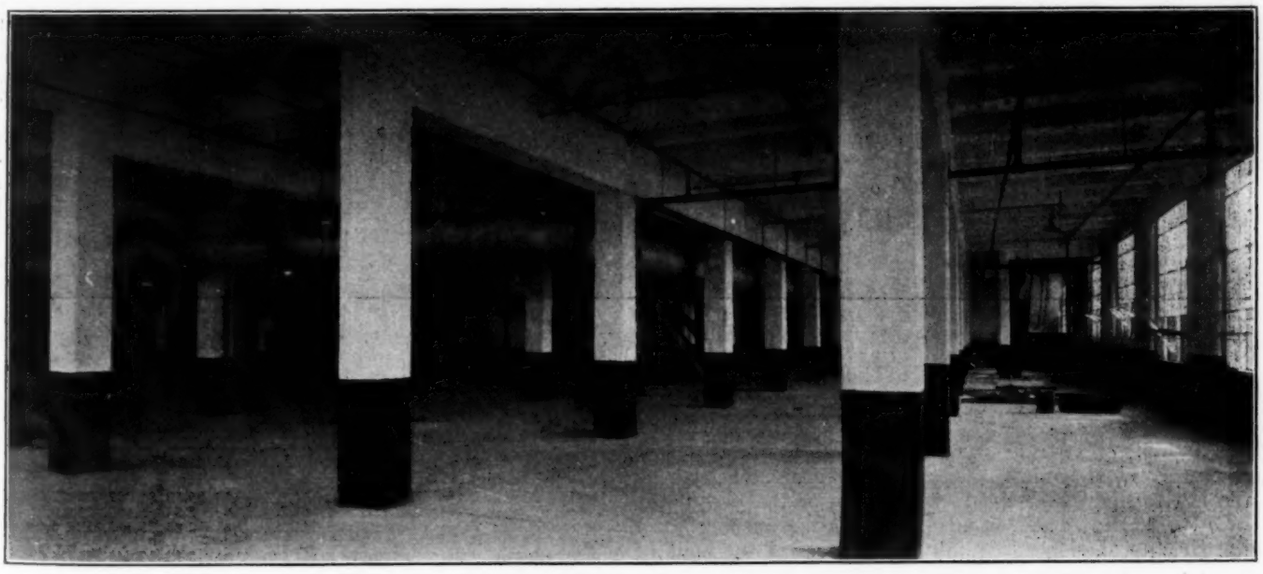
Lower Street Levels Enabled the Use of a Basement and Gave Excellent Light

7 ft. high and are thus subject to the same general shop conditions of heat, light and ventilation. The two sections along the outer wall are used for work benches, closed varnish drying racks, and other similar facilities, a paint storage room of sufficient capacity to cover daily requirements, two stairways to the basement and two 5-ton automatic electric elevators with platforms of 6 ft. by 12 ft. and 7 ft. by 14 ft. respectively. A truckway has been provided longitudinally through the center of the floor area. The scaffolding supports are of an interesting design being made from channels riveted together with sleeves over the rivets to hold the channels 1¼ in. apart. Cast-iron brackets counterweighted for easy handling slide up and down on these supports and are held in position by a cast-iron trigger latching over the rivets. The flooring, as stated, is of concrete, the section around the rails being recessed and filled and waterproofed with asphalt. Outlets for portable lights and for power, gas, water and steam are located along the roof columns between tracks.

The Basement Provides Space for a Variety of Work

The basement area was divided into a number of sections by permanent walls, only about two-thirds to three-fourths of the area being floored for regular use. This floored section is separated from the unfloored part by a permanent wall and is in general that part of the basement that adjoins the outer walls facing the streets, although some back space has been utilized for storage purposes since natural light is not a necessity for this purpose. Additional lavatory and toilet facilities have been placed on a mezzanine floor in one corner of the basement. This is followed in turn around the outer wall by the tin shop and the cabinet, electrical and upholstery shops. These various shop sections are not separated from each other by partitions but are merely assigned designated areas. Along the inner dividing wall there are located separate rooms for lacquering, acid and potash vats, glueing, pickling, paint storage, cleaning and drying cushions, etc., and recessed spaces for buffing wheels and for cushion and chair storage.

In view of the large amount of space which this basement made available, a large section has been set aside for the use of unrelated activities—the stationery and multigraphing departments of the stores department. The unfloored section of the basement is not used for any purpose other than for the heating plant although it is suitable for future use for storage and other similar purposes when the necessity arises. The coach shop, the paint shop and the basement section are equipped for fire protection with hose reels and fire extinguishers located at intervals and by a complete overhead Grinnell sprinkler system, including a total of 1,407 automatic nozzles. The floors in the basement consist of 5 inches of concrete, reinforced with wire mesh.



The Use of a Basement Level Provided a Greatly Increased Space Not Often Found in Coach and Paint Shops

The heating system consists of two Sirocco units delivering hot air to two main ducts; it is distributed by means of overhead metal conduits with outlets at various

points. Heat is only necessary for about 45 days of the year and ordinarily the main shops can be brought up to a working temperature in about one-half an hour. However, during such times, one unit is kept going during the entire day in order that the basement sections can be kept comfortable.

The new coach and paint shops were designed by and erected under the supervision of the engineering department of the Central of Georgia, C. K. Lawrence, chief engineer, J. B. Maddock, engineer of bridges and buildings, and G. A. Belden, architect. The contractors were the George B. Swift Company, Chicago, general contractor; the Steel Products Company, Savannah, furnished and erected the structural steel; the Allison Steel Products Company, Chester, Pa., the sash; the Allan Engineering & Manufacturing Co., Savannah, the heating and scaffolds; and the American Elevator & Machine Co., Louisville, Ky., the elevators.

Crossing at Cottondale, Fla., With Triple Warnings

THE engraving shown herewith is from a photograph taken at Cottondale, Fla., on the Atlanta & St. Andrews Bay Railway where the Road Department of the state of Florida has installed barriers, one on each side of the railroad, to compel drivers of automobiles to limit their speed before passing over the crossing.

Crossing Barriers at Cottondale, Fla., Atlanta & St. Andrews Bay Railway

The "island" which appears in the foreground of the picture is 10 ft. wide at its widest part, and the curb on the left begins 70 ft. short of the ends of the ties of the railroad track. The curved section of the curbing joins the straight section at a point 20 ft. short of the ends of the ties. The curve, as shown, is sharp enough to compel moderate speed. At the edge of the roadway is a stout fence, the Page "Hi-Way" Guard, made of a heavy resilient link web. This fence, supported on heavy posts, is said to have stopped automobiles traveling as fast as 45 miles an hour.

Besides the curve, made visible at a distance by the white curbing, the motorist is warned by the usual "RR" sign, beneath which is a red reflector that becomes a stop signal in the face of automobiles approaching at night, the value of the warning depending on the size of the automobile's lights. Cottondale is at the intersection of the Atlanta & St. Andrews Bay with the east and west line of the Louisville & Nashville.

Fuel for Road Locomotives

WASHINGTON, D. C.

THE Bureau of Statistics of the Interstate Commerce Commission has begun the publication of a new statistical statement showing the consumption and cost of coal and fuel oil for road locomotives in freight and passenger train service (charged to operating expenses) for Class I railways in the United States. The report is compiled from 160 reports (Form OS-E) representing 175 steam railways, not including switching and terminal companies. For the month of January these roads consumed 9,209,561 net tons of coal, as compared with 9,436,057 tons in January, 1924, at an average cost of $2.82 a ton against $3.23 in January last year. They also consumed 185,665,593 gallons of fuel oil, at an average cost of 2.87 cents a gallon, against 188,824,775 gallons at an average cost of 2.46 cents a gallon, in January, 1924. The total cost of coal in January, 1925, was $25,932,394 as compared with $30,638,594 for January, 1924, and the total cost of oil was $5,330,681 as compared with $4,638,939 in January, 1924. The lowest cost for coal is shown for the Pocahontas district, $1.83 for January, 1925, as against $2.62 for January last year. The coal figures subject to revision are as follows:

District and region	Net tons consumed		Cost per ton[1]		Total cost[1]	
	1925	1924	1925	1924	1925	1924
Eastern District:						
New Eng. Region[2]	364,064	376,615	$4.83	$5.50	$1,757,683	$2,069,694
Great Lakes Region	1,702,963	1,745,764	3.05	3.53	5,192,271	6,158,363
Central East. Region	2,283,350	2,286,164	2.41	2.83	5,493,752	6,466,180
Total, Eastern District	4,350,377	4,408,543	2.86	3.33	12,443,706	14,694,237
Southern District:						
Pocahontas Region	515,283	509,933	1.83	2.62	941,294	1,334,765
Southern Region	1,549,862	1,603,531	2.54	3.06	3,929,840	4,908,491
Total, Southern District	2,065,145	2,113,464	2.36	2.95	4,871,134	6,243,256
Western District:						
Northwestern Region	1,121,665	1,188,152	3.23	3.52	3,620,803	4,176,587
Central West. Region	1,260,045	1,335,652	2.96	3.17	3,726,946	4,232,319
Southwestern Region	412,329	390,246	3.08	3.31	1,269,805	1,291,639
Total, Western District	2,794,039	2,914,050	3.08	3.33	8,617,554	9,700,545
United States	9,209,561	9,436,057	2.82	3.25	25,932,394	30,638,038

[1] Invoice price plus freight charges.

[2] Includes Boston & Albany, which is included with New York Central System in Summary of Revenues and Expenses.

The Pennsylvania's New Rule Book

Thorough revision utilizes observations of many operating officers in past 15 years

THE Pennsylvania Railroad, now operating 10,509 miles of line, has completed a very thorough revision of its train-rule book, including both the standard and the non-standard sections of the code, and is to put it in force on all divisions on April 26. While there is no very radical change in any feature of train operating practice, there are numerous additions and modifications which serve to bring together, in one book, the results of a large number of experience-lessons founded on the careful observations of scores or hundreds of Pennsylvania operating officers who have been working under the code in its present form for the past 15 years.

Making standard throughout the Pennsylvania System the A. R. A. rule to use a flag (or a lantern) in addition to the fixed semaphore (or position-light signal) in all cases where a train is to be stopped for orders, is one of the outstanding changes. Provision of whistle signals for calling in flagmen when running against the current of traffic is another. "Track cars"—meaning the small four-wheel gasoline motors used by track repair forces and signal maintainers—have been made the subject of a simplified chapter. A new clearance card and two new caution cards are prescribed; and any important movement of a train except by a fixed signal or by a card evidently is intended, henceforth, to be a rare occurrence.

These and other changes are set forth more in detail below.

A new section of 56 rules—numbered 700 to 755 inclusive—brings together a great number of subjects hitherto dealt with in the time tables—each division of the road by itself. These rules, heretofore wholly ignored in the standard book, are very numerous and, of course, not always alike on different divisions; and the composition of this section involved the reading and comparing of about 7,000 rules. The Pittsburgh division time-table, for example, has over 80 pages of rules. This number includes, of course, many which are strictly local to that division, and which must continue, as now, division rules, not System rules.

The "general definitions" are amplified to give clearer and more exact meanings to the words engine, engineman, track-car (meaning motor-car, used by track repair men); driver (meaning the operator of a track-car) and train-order signal. A train-order signal is a flag or lantern, red or yellow, displayed in addition to the fixed signal, when the operator has an order to hold a train or orders to be delivered to a train. The fixed signal has no name given to it in this paragraph, but it is probably always a block signal.

The definitions of home signal, distant signal, and dwarf signal are included in these "general definitions" preceding the train rules.

Rules 2 and 3. There is no mention of watch inspection here or elsewhere.

Rule 12 provides that the motion of the hand or flag (in the day time) to give a stop signal, shall be above the shoulder.

Rule 12h provides that when a train has more than one engine and they are headed in opposite directions the conductor must see that hand signals are given intelligibly and unmistakably. Rule 16 has a similar supplement. Standard rule 12h is here numbered 13.

Rule 14 is amplified to cover whistle practice when trains are running against the current of traffic. Standard rule 13 becomes 14w.

Rule 17a; dimming of headlights; six paragraphs.

Rule 20; (green flags) on portions of the road these green flags and lights are not used.

Rule 26 throws responsibility on each of two or more gangs of car repairers who may be at work at the same time, on the same track. The rule is otherwise amplified.

Rule 27 is modified to provide for practice where "grade signals" are used.

Rule 33a.—Switch tenders (main track) use a green flag or light to give proceed signals.

Rule 34 reads: "Immediately upon seeing a fixed-signal affecting the movement of their train, the engineman and fireman must, and when practicable the trainmen will, call its indication by name to each other." The management believes that firemen can do their firing when not approaching a signal which they must see. In case of a train of cars being pushed, this rule applies to the trainmen who are on the leading car.

Rule 75 consists of five paragraphs, relating to examinations of bulletin boards when coming on duty, etc.

Rule 80, eleven paragraphs, regulates the use of track-cars. Rules 85, 90, 93, 94 and 97 have interesting additions or supplementary paragraphs.

Rule 99 follows the A. R. A. standard, naming no specific distance to which a flagman must go. A paragraph is added reading: "Conductors and enginemen are responsible for the protection of their trains."

Rule 100a requires flagmen, signaling a train having two or more locomotives in front, to notify each engineman why he has been flagged.

Rule 101a contains cautions applicable to the movement of steam derricks, ditchers, etc. When adjacent tracks are obstructed in such circumstances and flagmen are sent out, the locomotive whistle must not be used to recall them.

Rules 102, 103 and 104 are much amplified. Rule 103 requires that when trains are frequently pushed, a "back-up hose" and whistle must be used. With this appliance the engineman is relieved from the requirement that he shall stop if he cannot see the motions of the man on the leading car. Standard rule 105 does not appear. Many differences appear in 105-108.

The remaining rules below 200 vary somewhat from those in the standard code as regards arrangement.

Rules 150-153 provide regulations for using cross-overs, etc.

Telegraphic Train-Orders

Rule 206 specifies four classes of locomotives. Rule 208 does not include the meeting point in the address. Rule 221 differs, in some details, from the standard. Rule 221a provides for the use of both semaphore (or light-signal) and a flag or lantern, and reads, in part:

"When a train order is to be delivered to a train, the fixed-signal must be displayed at stop for the track and in the direction of the approaching train, and a train-order signal [flag or lantern] must be displayed in the place provided for the purpose, a red train-order signal

indicating '31' orders, or '19' orders that restrict the superiority of the train at that point; a yellow train-order signal indicating other '19' orders." Operators must not clear these signals for an approaching train unless they know that the train is not the one to which orders are addressed. This combination of signals must be acknowledged by the engineman by two short sounds of the engine whistle.

The two remaining paragraphs of 221a regulate the delivery of Form 19 at the meeting point, and also the delivery of orders without stopping the train. A "19" train-order must not be used to restrict the superiority of a train unless the movement is protected by some form of block signals.

Rule 221c reads: "The operating lever must be blocked with a standard blocking device by the operator, leverman or signalman, to indicate that the operation of the lever is restricted—

"When train orders are received either to hold trains, or which restrict the movement of trains.

"When tracks, switches or signals are undergoing repairs, or when tracks are obstructed."

The explanation of the forms of train orders fills 11 pages. Form H has been amplified to require a work train to protect itself against extras in both directions, in accordance with the A. R. A. standard. Form R is provided for moving trains against the current of traffic.

Rule 251 provides for making block signals superior to time-table authority.

Following this section, there are 12 pages containing Rules 275-290, inclusive, which describe the standard signal aspects, with colored illustrations; with a note, pasted in, to the effect that on divisions where non-standard signals are still in use they must be described in the time table.

These pasted-in notes, printed on pink leaves, will be found at a dozen places in the book. Four of them contain the requisites for installation of the manual block system, the controlled manual block system, the automatic block system and interlockings. Others contain notes calling attention to what certain rules do not require, etc. Pink leaves appear only in the books given to officers.

We note the main points in which the signal aspects are different from general practice.

All signal blades are yellow.

Rule 275, stop signal; six illustrations. A semaphore blade with a round end, when inclined upward 45 degrees is a permissive block signal, showing a yellow light at night. On such a signal the second arm has a square end and displays, at night, when horizontal, two red lights, side by side. Passenger trains must not accept a permissive block signal. A semaphore with round end, having no second arm, has the red lights side by side in the same location as the second arm. The dwarf semaphore stop signal shows a purple light at night.

Rule 276, stop-and-proceed signal, three illustrations. The position-light signal is distinguished from a simple stop signal by a single light below the group of three.

Rule 277, grade signal; same as 276, except that the second arm of a semaphore, when horizontal, shows a yellow light, and below all the lights or arms there is a yellow disk bearing the letter G. Under this signal heavy freight trains proceed without stopping into an occupied block, but not faster than 15 miles an hour.

Rule 278, caution-slow-speed signal, five illustrations. The position-light signal has, below the main group, three lights arranged diagonally, the lower one at the right and the higher at the left. With a two-arm semaphore, the upper arm stands horizontal and the lower one 45 degrees upward. Indication: "proceed with caution, not over 15 miles an hour."

Rule 279, slow-speed signal: two illustrations. These show position-light aspects only. The main group is horizontal; below are the three lights in a diagonal line, the lower one at the *left*. Indication: "proceed, not faster than 15 miles an hour, prepared to stop at next signal."

Rule 280, permissive block signal; three illustrations. The position-light signal consists of three lights arranged diagonally, with lower light on the right. The semaphore has a round end and inclines 45 degrees upward. The second arm has two red lights, as before noted.

Rule 282, caution signal. The position-light signal shows three lights, diagonal, with lower light at the right; and it differs from 280 in having a single light below the group. The semaphore has a fish-tail end and shows a yellow light. The second arm is like the first; if no second arm, the yellow light in its place is in a vertical line with the main light. This is the usual distant signal for a switch. If a train passing this signal is running faster than half its maximum authorized speed, it must be at once slackened to that rate.

Rule 283, approach signal; eight illustrations. The position-light signal has the three lights, diagonal, with the lower light at the left. Like rule 282, this requires speed to be limited to one-half the maximum authorized.

Rule 284, approach-restricting signal; six illustrations. This is the cautionary signal two blocks back from a stop signal. The position-light signal, three lights, diagonal, and below the main signal three lights in a vertical line. The semaphore signal shows the main arm 45 degrees upward and the second arm vertical; the upper arm at night shows a yellow light and the lower one a green light. The speed *at the next signal* must be not over one-half maximum, and not over thirty miles an hour.

Rule 285, clear restricting signal; three illustrations. The position-light signal shows three lights, horizontal, with three vertical below; the semaphore shows the upper arm horizontal with a red light and the lower one vertical with a green light. The speed must be not over half the maximum and not over 30 miles an hour.

Rule 286, clear signal; 10 illustrations. In these illustrations all types show the upper signal vertical; but there is one showing two fish-tail arms, the lower one of which inclines 45 degrees upward and shows a yellow light.

Rule 287, clear block signal. This arrangement is for use with the manual block system. The position-light signal has a single light below the group, as in Rule 276. The semaphores have round ends and there is a second arm showing two red lights horizontal. Rule 288, take-siding-indicator. The position-light signal for this indication consists of four lights set at the corners of a square with a fifth light in the center.

Rule 289, red train-order signal; a red flag with a red light, to be used in addition to the fixed signal.

Rule 290, a yellow flag, with a yellow light (for "19" orders which do not restrict rights).

Block and Interlocking Signal Rules

Following the signal illustrations come the signal rules: 301-375, manual block system; 401-473, controlled manual; 501-514, automatic block system; 601-685, interlockings. Rule 307 provides for protection by the manual block signal rules when a waiting train has to be set off on a main track. Rule 505b contains the same provision to apply where automatic signals are in use.

Rule 301 instead of describing the aspects, refers the reader back to rules 275, etc.

Rule 311 and the corresponding subsequent rules speak of signal levers not as "in the normal position," but as "in the position displaying the most restricted signal indication."

Rule 317d provides for block operations within yard limits, consistent with Rule 93.

Rule 419, under which a manual signal is put at stop after a passing train has cleared the signal 300 ft., is modified to omit the 300 ft. rule if there is protection by a distant signal.

Rules 319a and 419a provide for the movement of trains between two block signals, one in the rear of the other, both controlled by the same block station.

Rule 326 is modified to save time in moving a train out of a side track after meeting another. Rule 342, for

FORM D

PENNSYLVANIA RAILROAD SYSTEM

FORM D

CAUTION CARD

_____Station,_____M. _____19____

To Conductor and Engineman: Train_____on_____track.

Means of communication have failed:

1. (FOR NON-INTERLOCKED BLOCK-SIGNAL AND INTERLOCKING BLOCK-SIGNAL THAT DOES NOT GOVERN MOVEMENTS WITHIN INTERLOCKING)—You may proceed with caution under Stop-signal expecting to find track obstructed.

2. (FOR OTHER INTERLOCKING-SIGNALS)—The Interlocking-signal displayed governs movements within the interlocking only; movements into the block must be made with caution, expecting to find track obstructed.

_____Signalman.

Conductors and enginemen receiving this card properly filled out and signed by the signalman will be governed as follows:

At non-interlocked Block signals, and interlocking Block signals that do not govern movements within interlocking, train may proceed with caution under Stop-signal prepared to stop short of any obstruction.

At other interlocking signals, in making a movement within the interlocking, be governed by the Interlocking signal for such movements only; trains may proceed into the block with caution, prepared to stop short of any obstruction

When this card is used at interlockings, it must be delivered to the engineman before a signal to proceed is displayed for his train.

closing a block station, has been rearranged so as to avoid keeping signal men on duty unnecessarily.

Rules 340a and 375 have been revised to facilitate and safeguard the movement of trains when a block station which has been closed is reopened.

In the requisites for the installation of interlocking signals the use of distant signals is mandatory. Rule 605, which makes interlocking signals superior to time table rights, applies only where there is full distant signal protection.

Rule 667 stipulates that a locomotive must not stand over movable parts of interlocking, during freezing weather "if possible to avoid it."

The present book contains a new clearance card and two new caution cards, forms C, D, and F. The old clearance card, form A, for use particularly on single track, does not appear in the new book. The new forms are 6 in. wide by 4¾ in. in height and, like most "cards" of this kind, are printed on thin paper, though not so thin as that used for train orders. One of the caution cards is shown herewith in facsimile, reduced about one-third in width and height.

The regulations for the use of these cards are found in rules 629 and 663. A card instead of a hand signal must always be used when it is necessary to authorize a train to pass an interlocking signal at stop. A train must not be authorized to pass such a signal if it is physically possible to clear the signal. If a train is authorized to pass an interlocking signal at stop, when it is physically impossible to set it in the proceed position, the card definitely places the responsibility on the engineman to "run expecting to find track obstructed, broken rail or switch not properly set."

The old practice was that in the case of means of communication having failed, a train was authorized by card to pass an interlocking block signal at stop, although it was entirely possible to set the signal in a proceed position. The new rules provide that in such cases the train is instructed by card that signal displayed governs its movements within the interlocking only, and movements within the block must be in accordance with instructions contained on the card; the signal is then set in proper proceed position. The reason for this change in manner of operation is that in many instances the signalman has no practical means of definitely determining that the route through the interlocking controlled by a certain signal is all right until that signal is set in the proceed position.

New "Standard" Rule

Following the signal rules there are 56 new rules—Nos. 700-755—covering a variety of subjects heretofore dealt with in different ways, on different divisions, by means of rules printed in the time tables. These rules are:

700. Trains standing on grades.
701. Coal and water.
702. Equipment failures.
703. Train inspection by crews.
704. Hours of service law.
705. Vision, glasses, goggles.
706. Uniforms.
707. Side and trap doors on vestibule passenger cars.
708. Refuse not to be thrown from moving trains.
709. Station announcements.
710. Sleeping passengers not to be disturbed.
711. Starting passenger trains, two or more engines.
712. Sleeping car guard.
713. Doors closed, cold weather.
714. Keep aisles clear.
715. Passengers, seating of, and riding rear platform.
716. Blind persons, care of.
717. Ejectments.
718. Passenger service disarranged, inform passengers.
719. Engineman pilot, run engine.
720. Electrically lighted cars, train line wires.
721. Theatrical effects; doors secured; report irregularities.
722. Cars consigned to "order."
723. Flags and lamps carried on engines.
724. Eliminate emission of smoke by engine crews.
725. Heavy road machinery and farming implements at grade crossings.
726. Baggage trucks.
727. Spitting in cars and stations.
728. Passenger trains make-up.
729. Cars on sidings near public crossings.
730. Passenger trains extend beyond station platform.
731. Keep station crossings clear.
732. Track fence gates locked.
733. Public crossings, teams.
734. Warning before moving cars.
735. Flying switches and inspection of cars containing explosives, etc.
736. Hand switches and derails.
737. Marker lamps and other signs or lights on rear of trains.
738. Acetylene gas.
739. Snow-burning oil.
740. Automobile car end doors secured.
741. Attendants with live stock or other freight.
742. Passenger car buffer plates.
743. Track scales.
744. Refrigerator car doors.
745. Wooden flat cars.
746. Long cars without pivoted head couplers.
747. Information concerning shipments unlawful.
748. Commercial telegrams, delivery of.
749. Cars stored on tracks, crossovers or turn-outs equipped with track circuits.
750. Dead engines in freight trains, disabled engines and foreign engines moving under own power.
751. Forest and grass fires.
752. Contagious and infectious diseases.
753. Union news agents.
754. Selling articles unauthorized.
755 Personal injuries.

The last rule, No. 755, fills seven pages and deals with first aid, resuscitation, etc., and includes two illustrations.

Following this chapter there are the usual rules, 800-832, for different classes of employees, beginning with trainmasters, station masters and passenger conductors, and ending with highway crossing watchmen. This last rule, No. 832, fills three pages and goes much more into detail than the former rule. Red is the standard night color for signaling to persons on the highway.

The rules in this part of the Pennsylvania book, now as heretofore, are notable for being condensed to an extreme. For example the rule for passenger brakemen, No. 804, which in the book of one railroad recently brought out fills five pages, here fills but a trifle more than one page. This rule, which is a sample of the style of all of the Pennsylvania rules in this section of the book is as follows:

The Passenger Brakeman reports to and receives his instructions from the Train Master. He must obey the orders of the Station Masters and Yard Masters. While on duty he is under the direction of the conductor.

He must report for duty in uniform at the appointed time; assist in making up his train when required; give polite attention to the wants of passengers, avoiding unnecessary conversation. When passing through sleeping cars, do so quietly so as not to disturb passengers; at each station stop announce distinctly the name of the station; where trains are to stop for meals, make such announcement and the length of stop.

It is his duty to attend to the brakes when necessary; be provided with, take care of, and properly display train signals; attend to the lighting, heating and ventilation of the cars, open and close the car doors, and assist the conductor in the proper disposition of passengers, in preventing them from riding on the platforms, except as prescribed by the rules, or in any way violating the regulations provided for their safety; in preserving order; and in all things requisite for the safe and prompt movement of the train and the comfort of passengers.

He must immediately go back to protect the train, where the rules require it, without waiting for signal or instructions to do so. When more than one brakeman is used on a train the rear brakeman must perform this duty, and the front brakeman must in like manner protect the front of the train when the fireman cannot leave the engine.

Scrap Lines No Longer Justified

Only one of several important measures which were suggested by Mr. Loree at Beaumont

NEW YORK

TO THE EDITOR:

My attention has been called to the five-column letter of R. C. Duff, president of the Waco, Beaumont, Trinity & Sabine Railway Company, in your issue of April 4, page 870, in which Mr. Duff makes reference to me.

It may be that some of your readers would like to know what I actually said in my address at Beaumont, Texas, on March 5, last, and I am, therefore, asking you to print the attached extracts therefrom as published in the "Beaumont Enterprise" of March 6, 1925.

L. F. LOREE,
Chairman, Executive Committee, Kansas City Southern.

* * * * *

IN the olden times, in the stillness of the night, the cry of the watchman might be heard in the streets, "It is 12 o'clock of a starry night and all's well." In these days our information comes from so many sources, covers so many matters of interest and so lacks precision, that it is far from carrying with it the informative impetus that one got from the watchman of the early days.

What is the information we now receive: If, from the babble of voices, we seek to make out the purport of the cries we hear, we are told by the investor and the enterpriser that the inheritance tax is destructive of capital, that the graduated income tax is destructive of initiative, and that the incentive which has been at the base of our industrial progress is being so removed by these confiscatory taxes as to threaten the withdrawal of many upon whom we must depend not alone for progress in the future but for even the maintenance of our present standards.

We are told by the farmer that in a community whose business profits and whose wages for labor have been protected by a tariff from the destructive competition of the less fortunate countries in Europe, his industry has received no corresponding protection, or none of which he can make practical use.

We are told by the railroads, the greatest of our organized industries, that because of the wages and the conditions of employment prescribed during the period of federal control, they are unable to earn 5¾ per cent, even upon a valuation now totally inadequate because based on the low prices and wages of 1914 and that their earnings not only furnish no sufficient return upon the value of their plant but do not permit of its proper maintenance nor afford a structure of credit inviting investment money for its expansion.

Some Facts About the Railroads

In support of the position taken by railroad owners, I want to offer some evidence in brief outline. In a recent decision one of the members of the Interstate Commerce Commission said: "Notwithstanding the fact that approximately $5,500,000,000 of new money was put into the railways between 1912 and 1922 at the rate of approximately $550,000,000 per year, the aggregate market value of stocks and bonds of the carriers, indicated by market quotations, which was upwards of $15,000,000,000 in 1912, declined to approximately $13,000,000,000 in 1922. Deducting the new money from the 1922 figures would leave less than $8,000,000,000 to represent the shrunken value indicated by market quotations of capital investment which in 1912 was regarded as worth upwards of $15,000,000,000."

Is it surprising then that in recent years more miles of railway have been abandoned than constructed? Whereas, there have been in former times years in which ten and twelve thousand miles of additional track were laid, the annual report of the Interstate Commerce Commission for 1924 shows that in the previous year certificates were issued authorizing the construction of 427 miles of railway, and the abandonment of 532 miles.

In the New York Stock Exchange there are daily transactions in stocks of railroads, public utilities and industrial corporations, both the offerings and the bids being carefully tabulated and widely published. The records show that during the period of great activity, from November 5, 1924, to February 16, 1925, inclusive, the total transactions in stocks represented the sales and purchase of 145,921,600 shares, but so relatively slight was the interest in railways that only 33,809,900 railway shares exchanged hands; that is, the sale of railway stocks formed but 23.17 per cent of the total sales.

As to prices: Taking the Dow-Jones averages, which are the standard commonly applied, it appears that the lowest average for the 20 industrial securities that are represented which was attained during the year 1906 was $85.18; for the 20 railway stocks represented, the lowest average in the same year was $120.30. On February 18, 1925, the corresponding average for industrials was $120.07 and for railways $99.55. That is to say, the industrial average had increased 40.96 per cent and the railway average had decreased 17.25 per cent.

Consequent upon the panic of 1907 the group of railroad stocks selected as a barometer reflected a decline from the high to the low prices in the market of 45 per cent. Consequent upon the outbreak of the world war, these same stocks reflected a decline from the high to the low prices in the market of 43 per cent. The present quotation of these same stocks reflects a decline of 35 per cent from the high of November 3, 1919, so that they may be truly said to be selling today at panic prices. Meanwhile the industrial stocks in the list have overcome all of their losses and are today selling at prices somewhat above those of 1919.

The Seat of the Trouble

What is the cause of this calamity fraught as it is with peril to the country? It is due entirely and solely to the unceasing burdensome and destructive legislation of the Federal Congress and the state legislatures. When public affairs press for disposition the legislator must find a remedy. He is seldom fitted either by experience or by capacity to deal with the subject intelligently and the proposal he puts forward is but little more than a gambling venture, too often colored by selfish motives. When time proves his remedy to be futile he must again deal with the question and his recourse is to substitute a new trial horse for the disabled one, and this because he lacks the capacity and the industry necessary to identify the causes of his first failure and to overcome them. His second venture being no more successful than his first, he repeats the process without end.

The Interstate Commerce Act was adopted in 1887 and

for the first 19 years did no great amount of harm, but in 1906 there was enacted the Hepburn Act, in 1910 the Mann-La Follette Act, in 1913 the Valuation Act, in 1916 the Adamson Act, in 1918 the Babylonian Captivity by the federal government for 26 months; and, finally, the Transportation Act of February 28, 1920, was passed. It is in these last 19 years that the railroads have been so nearly destroyed. The Interstate Commerce Commission, not free to exercise its own judgment but delegated to carry out the will of its creator, the Congress, and faced year after year with new legislation frequently reflecting mutually destructive views, has not been able to aid the executives of the railroads in endeavoring to preserve their properties with the consequence that the tests that I have applied indicate the extent to which the public has been made apprehensive and deems this character of investment relatively unsafe while under political domination.

What the Communities Have at Stake

Vital as this condition is to the railroads and their owners, the communities they serve have even more at stake. It has been well said that "everything in life from marriage to manslaughter turns on speed and the cost at which many things and thoughts can be shifted from one place to another. If you can tie up a nation's transport, you can take her off your books. When a nation is lost the underlying cause of the collapse is always that she cannot handle her transport."

The thing which this community and this Southwestern country ought ceaselessly to watch, for its own well being, is the character of its transport. Of the transportation agencies available, steam railroad transportation bulks so large as to minimize all other methods. Unless this can be kept adequate, immediate, rapid, and cheap, the community will surely stagnate and may perish.

What can be done to insure satisfactory transportation? First, let us consider the adequacy of the existing plant. In preparing its New Year's issue, the *Railway Age* sent out a list of 10 questions to railroad officers generally and then asked one question each of several officers. The question they asked me was as to the increased business that could be taken on without further increasing the railroad facilities. There are in the United States some 253,000 miles of railroad. Because of the exhaustion of the resources they were built to serve, construction of competing lines of superior character, the destructive effect of automobile competition and other circumstances, there are as a minimum 30,000 miles that should be taken up and abandoned. Of the remaining 223,000 miles, half of the business of the country is handled on about 25,000 miles of railroad, and the remaining 198,000 miles get along as best they can on the other half.

The conclusion I finally reached was that the railroad plant could take on about 25 per cent more business than was handled in 1923. This margin is not sufficient to make the situation comfortable. We have frequently had years when the business increased 10 per cent, some annual increases of 15 per cent, and one of 26 per cent, so that we have barely a two-year margin. The extension of railroad facilities is difficult. The right-of-way is long and narrow, making building difficult while a growing business must be handled simultaneously with new construction. Projects of considerable magnitude require from two to five years for completion. Upon the lines of denser traffic a margin of 50 per cent is none too much. This would, of course, not be true of equipment, which can be much more readily produced.

Looking then to the future, I suggest that we should not undertake new construction unless the reason therefor is the unquestion need of the community. If the facilities furnished by the existing lines are inadequate the matter should be brought to their attention and every opportunity given them to rectify their shortcomings. If new construction is undertaken, it should only be permitted when it is of the first class; that is, the grade should not exceed one-half of 1 per cent, the track should be laid with rail of not less than 85-lb. to the yard, bridges should be rated for Cooper E-50 loading, and passing sidings, yard facilities and equipment should be ample. The community should not be burdened with the support of any more mileage of the second or third class.

Scrap Lines No Longer Justified

Second: We should critically examine the lines we have and unhesitatingly scrap those whose retention is no longer justified. The Boston & Maine reports that 42 per cent of its mileage handles only 3 per cent of their tonnage and it feels, and I have no doubt it is true, that this mileage should be abandoned. One of the things that has been most effective in our progress has been the courage with which we have scrapped obsolete tools, replacing them with larger and more modern devices, the courage with which we have torn down small and inadequate buildings and erected fine and properly equipped buildings in their places. What is good practice for the every-day householder, merchant and manufacturer, is just as truly good practice for the railroad.

Third: The service offered by the railroads should be treated in the same manner and where the traffic has been bled white by the competition of automotive vehicles, it should be ruthlessly reduced in proper proportion. The opinion seems to be general that where many stops are to be made and these stops are of considerable length, the horse-drawn vehicle is decidedly cheaper than the motor truck for distances under six miles; that where the distance to be traversed is so long that the chauffeur is kept away from his home base over night, there is no profit to be had in the movement, and this distance is roughly 35 miles, so that the field of competition is generally a zone of say 30 miles in width. The motor truck will handle about one-tenth the capacity of a freight car; the frictional resistances are about nine times as great; and the grades are perhaps 10 times as severe, so while they are competitive in certain fields the motor truck is no rival of the railroads in the larger aspect. For passenger movement, with the metalled surface roads now being built in such profusion, short haul passenger business is likely to be very largely absorbed by this competitive agency. As the Bible says, "it is hard to kick against the goad," and both the railroads and the communities they serve will be wise if they actively and adequately adjust their operations to these new conditions.

Fourth: Very much can be done to improve the railroad service and to reduce its cost. We are about completing the overhauling of our main machine shop at Pittsburg, Kansas, built in 1906 by Arnold & Company, then and now considered among the best mechanical engineering companies in the West. The improvement in machine tools is invariably greatly stimulated by either a war or the introduction of a new industry. This was the case at the beginning of the last century, with the Napoleonic wars and the introduction of the textile trades, made possible by Whitney's invention of the cotton gin; when inventive genius flowered with the names of Whitney, Maudslay, Fairbairn, Brunel and a host of others. Recently we have had the world war and the introduction of the automobile industry and we are again witnessing a great stimulus of machine tool development. The extent of the change may be measured by the fact that we took out of the Pittsburg shops as obsolete more than 80 per cent of the tools installed there only 19 years ago.

When the locomotive engine was introduced a conflict arose between the rope haulage and the individual systems of transportation, which was definitely determined in favor of the latter by the famous trials at Rainhill. In our time the unit system has been very seriously challenged by the electrical development, of which the moving current is closely analogous to the discarded rope. More recently the internal combustion engine has enabled the individual unit to drive out the interurban electric line, while the competition has stimulated inventive genius to the improvement of the steam locomotive. Not only has the locomotive increased in size but its economies have been greatly promoted by the application of a superheating device and by the nearly perfected system of heating of feedwater. It will be affected even more profoundly in the near future in my opinion by the use of higher boiler pressures, the experiment with 350 lb. pressure instead of the customary 200 lb. pressure having proved entirely successful; and by the use of powdered fuel, coal being reduced by a grinding process to a texture as fine as talcum powder. I think we are likely to see in the near future, for a thousand tons moved, the use of coal reduced by two-thirds. In addition to these mechanical changes, great economies may be looked for through reductions in grades and improvements in transportation appurtenances.

Restrictive Laws and Practices

Fifth: The statute books and the agreements with organized labor should be carefully scanned to eradicate the multitude of restrictive laws and practices that have accumulated in the past. There is no more reason for continuing on the statute books the prohibition against double heading of freight trains than there is for putting on the statute books a new law forbidding the farmer hitching two horses to a wagon or requiring all automobiles of over 30 horsepower to carry two chauffeurs. I once went over the subject and identified some 150 cases, relief from which might be expected to immediately save $100,000,000 annually.

Sixth: Consequent upon this reduction in costs, there would be, first, an improvement in credit and, second, the creation of a condition upon which could be based such a revision and reduction in rates as would revivify agricultural and industrial life. Contrasted with Europe, South Africa and South America, we require long distance transportation and that service demands not alone the greatest effort on the part of the railroads but an intelligent and hearty support on the part of the community.

Personally, I am by no means discouraged by the prospects, quite the contrary. I think for the first time in 19 years we can look forward with confidence upon the future.

The overwhelming defeat of the child labor amendment to the constitution, and the overwhelming defeat last week in the House of Representatives of the bill to annul the Pullman surcharge, which the Senate the week before had passed by a vote of 72 to 6, are but surface indications of a deep-seated change of attitude and a settled determination to return to the paths along which this country moved to its greatness and to root out and cast away the false beacons which have lured us so disastrously.

RUSSELL W. KYLE, a pumper of the Baltimore & Ohio at Union, Ohio, who has just been retired on a pension, had been in the service of the company 63 years, and had run a pump for 42 years. He was a track foreman for about ten years. W. C. Cox, smoke inspector at Pittsburgh and John Martin, general agent at Brunswick, Md., have each been in the service of the Baltimore & Ohio nearly 62 years.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended March 28 showed an increase as compared with the previous week, after having declined for two successive weeks, although it was still less than that for some of the earlier weeks in the year. The total was 931,395 cars, which was an increase of 24,006 cars as compared with the corresponding weeks of last year but a decrease of 4,879 cars as compared with 1923. Large gains in the loading of merchandise and miscellaneous freight overcame the reductions in all other classes of commodities as compared with the corresponding weeks of last year and the Pocahontas, Southern and three Western districts also showed gains. Coal loading was only 140,889 cars, a decrease of 13,760 cars as compared with last year, but merchandise showed a gain of 11,393 cars and miscellaneous freight a gain of 30,550 cars. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

REVENUE FREIGHT CAR LOADING.

Week Ended Saturday, March 28, 1925.

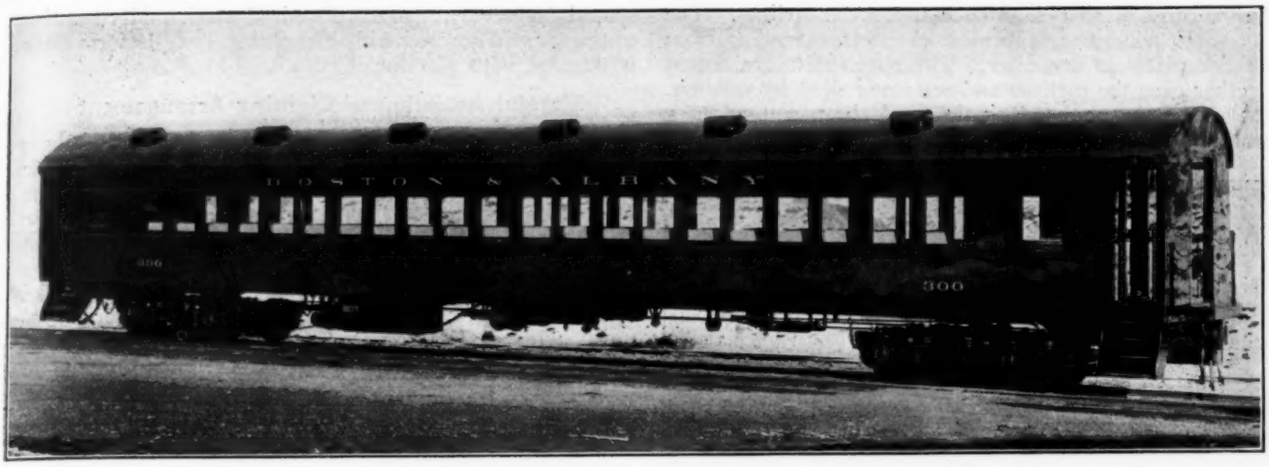
Districts	1925	1924	1923
Eastern	225,983	226,691	233,428
Allegheny	192,702	194,019	206,493
Pocahontas	40,199	36,659	37,525
Southern	159,057	146,842	148,869
Northwestern	114,789	113,725	114,000
Central Western	132,830	127,653	138,894
Southwestern	65,835	61,800	57,065
Total Western	313,454	303,178	309,959
Commodities			
Grain and grain products	34,875	35,823	41,713
Livestock	26,602	28,601	31,097
Coal	140,889	154,649	181,648
Coke	12,304	12,518	15,742
Forest products	82,062	82,113	75,944
Ore	12,884	13,849	15,434
Merchandise, l. c. l.	262,575	251,182	235,303
Miscellaneous	359,204	328,654	339,393
Total	931,395	907,389	936,274
Cumulative total 13 weeks	11,765,235	11,588,011	11,316,740

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended March 28 amounted to 52,523 cars, an increase of 1,328 cars over the previous week. Lumber increased 567 cars, pulpwood decreased 258 cars and other forest products 474 cars. Merchandise was heavier by 278 cars and miscellaneous freight was lighter by 351 cars. Compared with the same week last year the decrease was 5,404 cars, coal accounting for 3,626 cars of this and pulpwood 1,250 cars.

	Totals for Canada			Cumulative Totals	
	Mar. 28	Mar. 21	Mar. 29	To Date	
Commodities	1925	1925	1924	1925	1924
Grain and grain products	6,950	6,943	6,415	84,386	104,425
Live stock	2,412	2,288	2,399	29,265	27,782
Coal	2,631	3,729	6,257	68,786	64,409
Coke	270	252	257	4,133	3,441
Lumber	3,600	3,033	4,081	37,503	42,424
Pulpwood	3,792	4,050	5,042	52,690	52,387
Pulp and paper	2,130	2,098	2,205	27,640	28,345
Other forest products	3,082	3,556	3,014	42,821	40,697
Ore	1,119	1,292	1,184	15,082	12,116
Merchandise L.C.L.	15,406	15,128	15,169	180,556	165,027
Miscellaneous	11,131	11,482	11,904	128,827	135,251
Total cars loaded	52,523	53,851	57,927	671,689	676,304
Total cars received from connections	34,535	33,665	37,207	433,263	454,243

THE PENNSYLVANIA'S PLAN of employee representation has now been in effect over four years, and a review of its operation indicates that in a large number of instances difference between officers and employees are settled right on the ground. In other words, most of the questions arising are adjusted either between the employees themselves and their local supervisory officers or in monthly conferences with the division superintendents. The reviewing committees—the final authorities—received less than 3 per cent of the cases. Of the total number of cases thus appealed 44.3 per cent were decided in favor of the management; 29.1 per cent were decided in favor of the employees, and 26.6 per cent were withdrawn or remanded for further consideration.



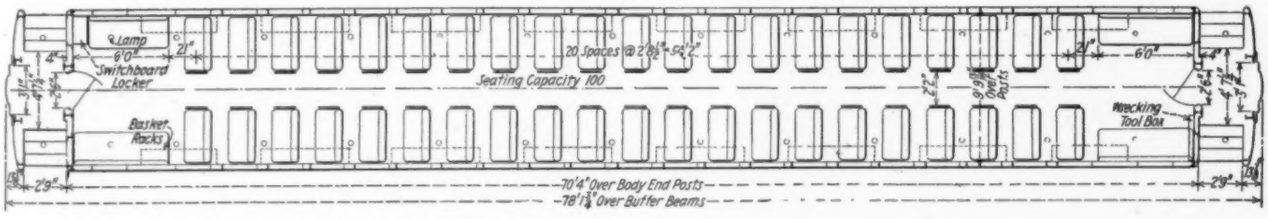
Boston & Albany Steel Suburban Passenger Coach

Boston & Albany Acquires Light Suburban Cars

Vestibule ends economically constructed—Weight of 101,500 *lb. gives approximately* 1,000 *lb. for each seated passenger*

THE Boston & Albany has recently placed in service an order of 50 of these cars built by the Osgood Bradley Car Company, Worcester, Mass. The equipment is intended to replace passenger cars now used on the main line and the Highland branch between Boston, Mass., and Riverside.

The problem of handling suburban passengers in and out of Boston was carefully studied, after which it was decided that the utmost seating capacity with convenient facilities for promptly loading and unloading were demanded by the conditions. Features of the cars which help to attain these ends are the ample space provided at each end of the car for standing room, the wide end doors and wide steps with four treads and the fact that the seats have no arms, which adds considerably to the ease of passage through the aisle and entrance into the seats.



Floor Plan of B. & A. Suburban Car Showing Seating Arrangement for 100 Passengers

Construction of the Underframe

The cars are of steel construction throughout, with steel interior finish. The underframe and superstructure details have been so designed that their strength is equal to that of coaches in through passenger service.

The center sills consist of two 12-in., 35-lb. channels, spaced 18 in. back to back and riveted to the bolster castings. Each channel is reinforced at the bottom by a 3½-in. by 3-in. by 7/16-in. steel angle. The cover plate is 28 in. by ¼ in. extending between the bolster centers. Cast steel body bolsters and platforms make up the two ends of the underframe construction. The side sills are 5-in. by 3½-in. by 7/16-in. rolled steel angles. The side and center sills are tied together with three ¼-in., pressed steel, flanged, crossbearers provided with ¼-in. cover plates.

The 12 floor supports form additional underframe members and consist of ⅛-in. pressed steel channel shapes. Riveted to the pocket in the bolster casting at each end of the car, are two end door posts which consist of 6-in., 12½-lb. I-beams. At each end of the car riveted to the bolster casting are two intermediate end posts made from 4-in., 8.2-lb. Z-beams. The 6-in. Z-beam body corner posts are riveted to the bolster casting.

Turtle-Back Roof Applied

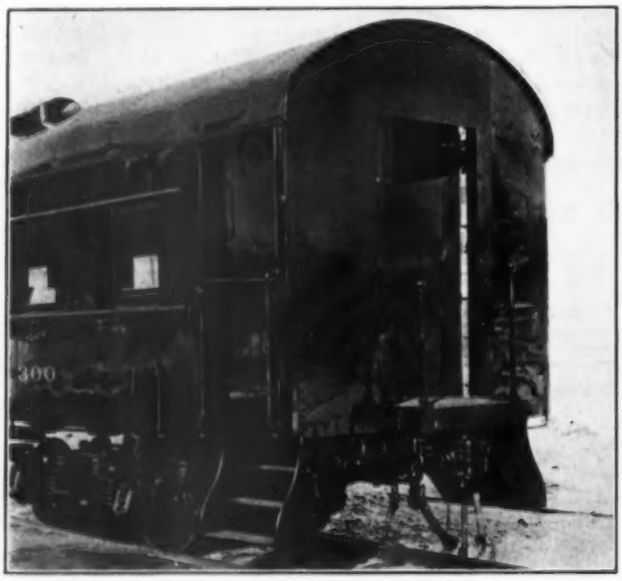
The roof is of the turtle-back type. The construction consists of 28 carlines of the flanged channel type made of 3/32-in. steel plate. There are three purlines of ⅛-in.

pressed steel, Z shapes, fitted between the carlines. The roof sheets consist of 1/16-in. steel sheets, extending from the side plates in one piece. The roof sheets are butted together over the carlines and are made tight by welding. The cars have no hood as the roof sheets extend in a straight line to the intersection with the vestibule end

Ratan Seats Without Arm Rests and a Wide Aisle Add to the Ease of Passage Through the Aisle and Entrance into the Seats

sheets. The roof is provided with 12 Garland type ventilators, with registers in the interior.

Single windows are used in these cars with the sash fitted with O. M. Edwards window fixtures. The seats are spaced so that each passenger is opposite a window. Over the seats are basket racks of the Adams & Westlake



End Construction of the Car is Unique and Economical

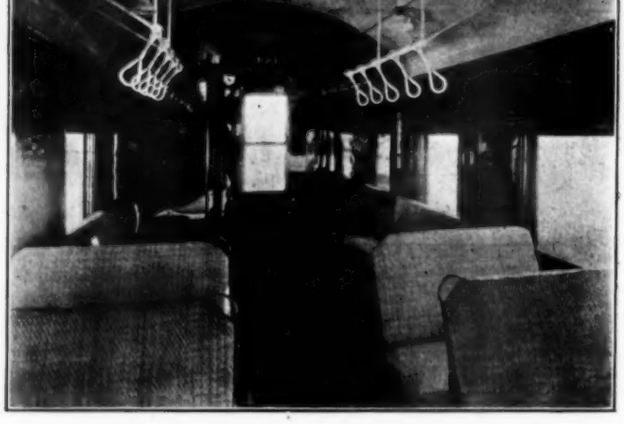
type which will provide ample space for commuters' parcels.

The cars are well insulated, having three-ply of ¾-in., special hair felt which covers the entire inside surface of the outside sheathing on the sides and ends of the car, except above the windows. The flooring is composed of special ⅝-in. corrugated galvanized steel, laid crosswise of the car and covered with Flexolith. The platform floor is covered with Feralun.

Careful Attention to Lighting Arrangement

To facilitate reading, the lighting arrangement of these cars has been carefully planned. Along each side of the low-arched ceiling are placed 26 attractive lamps. The head lining is finished in a cream color down to the frieze moulding. This combination of a low-arched, light colored ceiling, diffuses the light so that the passengers can read comfortably. Current for the lamps is furnished by Gould electric light equipment, and each car is provided with a 225-ampere Edison battery. The steam heating system is of the Vapor type, designed to maintain at all times a comfortable temperature on the interior. The cars are equipped with the New York U. C. air brake equipment.

Four-wheel trucks are used, equipped with the Simplex clasp brakes, and 33-in. forged steel wheels. The small wheels are used to facilitate charging the storage batteries,



The End of the Car is Provided with Ample Standing Room—Note the Overhead Hand Straps for Standing Passengers

by their greater number of revolutions. The journals are 5 in. by 9 in.

Ample Room Provided for Entrance and Exit

It will be noticed that the end doors have an opening of 2 ft. 6 in. and that considerable room has been provided immediately inside of the doors. The platforms have an opening of 2 ft. 9 in. at the vestibule steps. A standing space of approximately 14 sq. ft. is available. The vestibule steps have four treads and are easy to reach from the platforms at track level.

The empty weight of these cars is 101,500 lb. With a seating capacity of 100 persons the weight per seated passenger is but slightly over 1,000 lb. The over-all length of the cars coupled is 78 ft. 11¼ in.

DURING JANUARY, 1925, loss and damage payments made by the principal railroads of the United States amounted to $3,547,097 as compared with $4,731,613 in the same month of 1924, a reduction of 25 per cent. The number of claims presented totaled 2,629,631 in 1924, as compared with 2,993,359 in 1923. In 1924, 67.6 per cent of the claims were adjusted in 30 days and 86.5 per cent in 90 days, compared with 65.6 per cent adjusted in 30 days and 86.2 in 90 days during 1923.

C. & O. Younger Men's Conference

An unusual development which seems to give great promise for the future

A UNIQUE conference of a selected group of boys and young men from the Chesapeake & Ohio and the Hocking Valley was held at Huntington, W. Va., beginning Friday afternoon, April 3, and ending Sunday morning, April 5. It was attended by 113 delegates, 99 from the Chesapeake & Ohio and 14 from the Hocking Valley. This group included 60 apprentices, 21 clerks, 16 helpers, 6 call boys and 10 miscellaneous occupations. The delegates were between 16 and 21 years of age. In addition there were 50 adult leaders, including 25 railway officers, 13 Y. M. C. A. secretaries, most of whom accompanied the different groups of boys to and from the conference, and 12 other leaders and experts in boys' work. All of the delegates and leaders were housed in the Hotel Frederick, so that they were convenient to the place of meeting.

The program included some addresses, but much time was given to group discussions and demonstration. In general, the purpose of the conference was that the young men might secure a better idea of the economic importance of the railways to the prosperity of the communities served and the country at large; also of the importance of co-operation and the young man's relation to his fellows at work and in the community. An effort was made to point out the opportunities for life work in railroading and to assist the young men to find their proper place in the organization; also to advise them as to how to make the best progress in reaching their objectives.

The conference was called by President W. J. Harahan and was largely inspired by the national conference of younger railroad men, which was held under the auspices of the International Committee of the Y. M. C. A. at Detroit last November (*Railway Age*, November 22, 1924, page 940). So far as is known, this is the first system conference of its kind. It is true that the apprentices on the Santa Fe have held two system conferences*, but these meetings included only apprentices from the mechanical department and were concerned almost entirely with the activities of the apprentice clubs on that system. The Chesapeake & Ohio-Hocking Valley younger men's conference included boys and young men from all departments and its objective was along somewhat broader lines. Because of the fact that this is the first system conference of its kind and that it seemed to make a profound impression both upon the boys and the railroad officers who attended, a general outline of the program and the nature of the meeting may be of interest.

Getting the Conference Started

It was at first intended to limit the conference to about 75 boys, but applications were received from almost 1,000 of the younger men and it was finally decided to select a larger number. The expenses of the delegates were paid by the company, but the boys were not paid for the time away from their regular work. The various groups were accompanied by adult leaders who kept in touch with the boys to and from and throughout the conference. The selection of the delegates and the details of the conference were arranged under the direction of E. W. Grice, assistant to the president, and B. F. Bryant, director of health and recreation, with the assistance of the Transportation Department of the National Council of the Y. M. C. A., local officers of the railroad and Railroad Y. M. C. A. secretaries.

One factor which added much to the efficiency of the conference was the music and the mass singing under the direction of G. W. Campbell, of the Y. M. C. A. College at Chicago. Under his skilful leadership the reserve and embarrassment of the large group of boys gathered from different points on the system was quickly broken down and a friendly and cordial spirit developed.

The program opened, following a registration period on Friday afternoon, with a song service and an address by G. K. Roper, Jr., senior secretary of transportation of the Y. M. C. A. on the purpose and hopes of the conference.

C. C. Robinson, industrial secretary of boys' work of the National Council of the Y. M. C. A., then proceeded to arrange for the division of the boys into nine groups for discussion purposes. Each of these groups was related to a practical railroad officer and a Y. M. C. A. specialist in boys' work. Each group also selected a chairman and a secretary, the latter to keep a record of the most important decisions arrived at in the discussions. A special meeting room was assigned to each of these groups. A meeting of the leaders of the discussion groups was held late Friday evening, in order that there might be a thorough understanding of how the discussion groups were to be conducted and to give some thought to the topics which were to be discussed on the following day.

At the close of the afternoon session the following conference officers were elected: President, E. W. Mays, boilermaker apprentice, Clifton Forge, Va.; vice-presidents, Roy Bowling, machinist apprentice, Russell, Ky., and B. E. Kelly, machinist apprentice, Peach Creek, W. Va.; secretary, J. B. Gilliam, private secretary to assistant to the president; assistant secretary, E. W. Belew, machinist apprentice, Stevens, Ky.

The Conference Banquet

A conference banquet was held at 6:30 on Friday evening, the music being furnished by the Chesapeake & Ohio Huntington shop band. After the dinner the president of the conference introduced the toastmaster, E. W. Grice. Addresses of welcome were made by John M. Glass, machinist apprentice at Huntington, and E. I. Ford, assistant to the general superintendent at Huntington. "The best way to get ahead," said Mr. Ford, "is to prepare for the work that lies ahead. The young man who studies the job ahead of him is ripe for promotion." A response to the addresses of welcome was made by B. E. Kelly, one of the vice-presidents of the conference.

Dr. John P. Munn, chairman of the Transportation Committee of the National Council of the Y. M. C. A., emphasized the spiritual element in co-operation and friendship. "Be honest to your own self," he said, "and you will not fail." C. H. Terrell, assistant superintendent motive power, spoke of the new attitude in employee relations which had resulted in better conditions for the workers, with a resulting increase of loyalty on their part. Roy Bowling, machinist apprentice, Russell, Ky., and A. T. Moody, clerk, Richmond, Va., both of whom

**Railway Age*, June 19, 1924, page 1716; October 25, 1924, page 740; March 21, 1925, page 798.

had been delegates from the Chesapeake & Ohio to the Younger Railroad Men's Conference at Detroit (the C. & O. had 22 in all), made brief reports on that conference and what it had meant to the young men. Mr. Moody, in particular, directed attention to the need of study and determination on the part of the young man who wishes to succeed; there should be no holding back or loafing on the job.

G. A. Northcott, president of the Chamber of Commerce, drew a contrast between the way in which the railroad employee was regarded now and in the earlier days. He felt that the marked change in this attitude and the high regard in which railroad men are now held was at least partly due to the influence of the Railroad Y. M. C. A.

C. B. Snow, vice-president of the Huntington Banking & Trust Company, and a former superintendent of the Chesapeake & Ohio, indicated that the more we put into our jobs the more we get out of them. The officer does not want, "I don't know," for an answer. "If it is discovered that you know your job, the implication is that you will know a better job just as well," he said. This thought was also driven home by Vice-President R. N. Begien, who indicated that the executives are continually on the look-out for good men, and that they are attracted to those who are putting the most into their tasks.

President Harahan Addresses Conference

The feature of the dinner was the closing address made by President W. J. Harahan, who was responsible for calling the conference. He first paid a high tribute to the Railroad Y. M. C. A. for the constructive work which it had done and the influence it had upon the lives of railroad employees.

In referring to the conference he said: "The purpose of such a movement as this is educational, and education is the headlight which shines ahead of us to guide our way, enabling us to avoid the pitfalls and obstructions which lie along the path of business life. Education is the ripened fruit of experience." He urged the young men to prepare themselves for the responsibilities of the future, and, drawing from his own experience, made a number of helpful suggestions.

"In the inventorying of ourselves," Mr. Harahan said, "we will find always some quality which we do not possess, the lack of which may perhaps interfere with our success. We must acquire the missing attributes when they are lacking."

"Believe in yourself," he said. This not, however, in a conceited way. The boys were warned against feeling self-satisfaction and regarding themselves as indispensable. This robs them of the ability to do painstaking, careful work.

"Every man should have a certain goal in life which he should strive to reach. He should set it high enough that it may mean some real accomplishment when it is attained."

It is important, President Harahan explained, that the young man in preparing himself for the future should secure a knowledge of human nature and study the best way to deal with his fellows. He also emphasized the necessity of cultivating the power of observation, of honesty of purpose, and of loyalty, which begets loyalty and develops co-operation. Emphasis was placed upon industry, which is the earnest, painstaking, persevering effort to do all things well; of thoroughness in doing each job, love of the work, stick-to-itiveness, common sense and originality. He urged the boys to ask questions about things that they do not understand. It is important when giving instructions to explain things fully, so that there may be no possibility of misunderstanding. There is available a great amount of literature which will be helpful to boys in any line of endeavor, and this they should read and study, to prepare themselves properly for the future. It is important always to treat men justly and impartially. Railway employees personify the railways in the eyes of the public, and this should make them more careful in their contacts with the public. Temperance in action, thought and word is a sign of strength and character. In closing his address President Harahan pointed out the importance of religion and directed attention to the part it had played in improving civilization. "Religion and duty to God," he said, "provide the solution of many of the difficult problems with which we are confronted."

Opportunities in Railroad Work

Saturday was an extremely busy day. The morning session started at 8:30, and after a "get-together and sing song," C. C. Robinson spoke briefly on the younger man's relations to his fellows at work and in the community. The discussion groups then withdrew and spent the next hour in open forum discussion of this question.

The groups then reassembled in the auditorium and a special vocational guidance blank was given to each boy. This form included a list of the many vocations and professions associated with railroading. The boy was asked to check that vocation or profession in which he was specially interested and to indicate what occupation he would like to be engaged in 10 years from today. He was also asked to indicate whether he had had any experiences which would indicate that he had special ability for this class of work, and to note down any particular problem or question in his mind about his work—present or future. After filling in these blanks the young men withdrew to their discussion groups to consider the question of finding their place in their life work. Meanwhile the forms which they had turned in were carefully examined and classified in different groups of eight each.

At the luncheon, which was held during the noon hour, the boys in groups of eight, were seated at tables, each of which was presided over by a railroad officer who was specially qualified to talk with the particular group of boys about their future; associated with him was a Y. M. C. A. worker who was specially trained in dealing with boys. At the close of the luncheon an address an "Opportunities for Life Work in Transportation" was made by Roy V. Wright, managing editor of the *Railway Age*, after which the leaders at each table, with the forms which the boys had filled in at the morning session before them, interviewed the boys to get some idea as to their training and qualifications and to advise them as to their future work and studies. The blanks with notations by the advisors were gathered and placed in the hands of the assistant to the president, who is to take steps to follow them up and see that so far as possible the boys are given an opportunity of developing along the lines for which they feel they are best suited. The following up of this work and the extension of this same attention to the other young men in the organization promises to be one of the most important results of the conference.

Address By Shop Crafts' President

For an hour during the afternoon the boys, under the direction of B. F. Bryant, health and recreation director, went through a series of simple but interesting games which require little or no equipment and can easily be introduced at boys' or men's gatherings or during the noon hour at the shop or in the office. Following this the delegates, as guests of the Huntington Chamber of Commerce, were given an automobile trip through the city.

The feature of the Saturday evening session was an address by G. H. Stewart, president of the Federated Shop Crafts of the Chesapeake & Ohio. He spoke on "Friendly Relations in Industry" and directed special attention to the responsibilities of the individual to his employer and to his fellows. He challenged the boys to think things out, base their conclusions on what is right, and then go ahead. "Dare to be different if you have a reason," he said. Blindly following the beaten path kills initiative and individuality.

A great advance has been made in the relations between the employee and the employer in recent years, Mr. Stewart said. There was a time when it was regarded as an indication of a yellow streak if an employee was friendly with the employer. He only had such relations as he was compelled to. When two intrenched armies confront each other, there is an open space between them known as "No Man's Land" where conflicts are waged. In transportation and industry this area between the employer and employee should be cultivated and should not be made a battleground. It is possible, for instance, to create an atmosphere of goodwill and mutuality in which grievances and strife cannot live. This, indeed, Mr. Stewart said, has been done at the Richmond shops on the C. & O. Co-operation cannot exist unless there is a friendly atmosphere. Mechanical ability on the part of the individual must be supplemented by a spirit of friendliness and co-operation; indeed, the latter elements are of greater importance than the former. At the close of Mr. Stewart's address an open forum discussion was held on the main points which he advanced.

The evening session closed with an illustrated address on the work which is being done among the boys of Czecho-Slovakia by H. C. Barden, the associate general secretary of the Y. M. C. A. in that country.

The closing session of the conference was held early on Sunday morning and included a devotional song service and reports of the findings committee, the resolutions committee and the credentials committee. C. C. Robinson made the closing address in which he challenged the boys to lead better lives and prepare themselves for their responsibility in building a better world. Many of the young men were inspired to make a definite record of forward steps which they intend to take. At the close of the convention the delegates divided into groups to attend the services of churches of their own selection.

The Engineer as a Railroad Executive*

A survey of present problems and trend of development show the value of broad training

By Julius Kruttschnitt
Chairman Executive Committee, Southern Pacific

TO judge correctly the qualifications of an engineer for the position of a railroad executive, we must make a comprehensive survey of the duties devolving on the chief executive officer of a railroad under present day conditions and of the difficulties which he has to overcome. Not only must we consider the problems that require solution, but we must take into account the limitations imposed by law on the revenues of railroads and the extent of control of their expenses that the executive is permitted to exercise. It seems appropriate, therefore, to introduce a fully developed outline of the problems that confront the responsible managing officer, the extent to which so far he has solved them, and to what extent they remain unsolved, after which we shall endeavor to show how the engineer has risen to new responsibilities, and what recognition stockholders and directors of railroads have accorded to his fitness to administer their properties.

Fundamentally, a railroad is a huge manufacturing plant designed to convert the energy locked up in fuel into work for transporting persons and property on specially designed roadways. The energy conversion is by means of individually operated locomotive units, and the success of the entire plant, measured by the spread between production costs of output in passenger-miles and ton-miles, and selling prices, depends on the efficient working of each individual unit.

To attain the maximum or even moderate success in creating a margin between the cost and sales prices of output, the necessary executive and administrative work can best be done by men specially trained in those branches of knowledge that contribute most to the efficient operation of railroads, on the degree of which depends success or failure; and the most important duty of the chief executive is so to select his official staff as to attain the best results. To pass intelligently on the qualifications of his staff and their recommendations that may reach him—in other words, to avoid being a mere rubber stamp to approve whatever is laid before him—requires a fair knowledge of the functions of each department head by the chief executive.

There is a wide difference in the kind of managing talent required on railroads now and 25 years ago. At the end of the nineteenth century, 35 cents net out of every dollar could be turned into the treasury; while at the present time only 24 cents, or 32 per cent less, can be turned in. It requires the closest kind of management and the services of very much more highly trained executives to meet all money requirements other than mere operating expenses out of 24 cents out of every dollar. To get the most work out of fuel, the largest material item of operating expenses, stresses the efforts of substantially every department on a railroad, and to obtain the best results requires the highest talent in a great many different branches of engineering. The course of civil engineering in our leading universities embraces courses in the allied sciences of mechanical and electrical engineering, and the important principles of physics, chemistry, geology and economics, so that the executive who has enjoyed the training afforded in a civil engineering course is peculiarly

* Abstract of a paper presented on March 18, at New York before a joint meeting of the Metropolitan section of the American Society of Mechanical Engineers with the New York sections of the American Society of Civil Engineers, American Institute of Electrical Engineers, American Institute of Mining Engineers and the New York Electric Society.

well fitted for co-ordinating and guiding the numerous operating activities on railroads and for securing the maximum output of salable products at minimum costs. An analysis of operations that produce transportation units will show that the engineer who has been trained to secure desired ends in the most practical, efficient and least expensive way can best contribute to the success of a railroad enterprise, and will indicate the directions in which he should prepare himself in college for executive duties, and will correspondingly indicate to the owners of railroads, other things being equal, the qualifications to seek in managers.

We repeat that viewing the railroad as a manufacturing plant designed for the sole purpose of creating the maximum of transportation units out of the minimum of fuel units, the greatest efficiency will be attained by that railroad whose executives co-ordinate best all departments and concentrate their activities on increasing output, from the sale of which the railroad must secure its revenues.

(Mr. Kruttschnitt then showed in detail how by the close co-operation between the executive, accounting, traffic, transportation, maintenance of way and the maintenance of equipment departments an approximate 13 per cent reduction of expenses could be obtained through the conservation of fuel.)

We now touch on a study of the trend of current and future economic development:

Much idle time and fuel can be saved by carefully designed engine terminal facilities, such as hot-water boiler-washing plants, well located supply tracks, etc., and above all, ample shops and modern tools to make repairs quickly. Additional shops and tools provided at El Paso on the Southern Pacific have reduced the average time in shops of locomotives 25 per cent, the effect of which is to add 33 per cent to the number of locomotives assigned to that division.

On a division operated with Consolidation locomotives where water is exceptionally good, 16,000 lb. of fuel are saved per locomotive per annum by the installation of a hot-water boiler-washing plant. Such improved facilities, while requiring large capital outlay, will increase the productive time of locomotives.

The burning of fuel in large terminals and shops should be centralized as far as practicable in order to eliminate machinery starting and stopping losses. Through the free use of individual electric motors on large tools and groups of small tools, the waste of running long lines of shafting and of operating tools needlessly when but one or two on the line are used, can be eliminated and substantial economies can be effected in the 16,000,000 tons of fuel consumed on railroads in shops, stations, etc. Twenty per cent of the power in a large railroad shop was saved by eliminating steam-pipe losses and 13 per cent more by abandoning long lines of shafting and many belts through substituting electric for steam power. The changes represented a saving of $120,000 per year.

The two principles affecting most profoundly the efficiency of stationary steam engines are compounding and condensing. Compounding alone may increase the efficiency of an engine 13 per cent, and condensing alone may increase it as much as 30 per cent, that is, condensing alone would increase the efficiency of fuel consumption of locomotives nearly as much as the brick arch, superheater and feed water heater combined, which amounts to 34½ per cent. Compounding, which was used in the United States at one time very much more than now, will certainly come into use again; so that the combined effect of all the steam saving appliances with compounding and condensing superadded, would be:

Brick arch when used has reduced fuel consumption to..91.0 per cent
The superheater when added has reduced it to.....72.8 per cent
The feed water heater when added, to .....65.5 per cent
Using condensing engine may reduce it to.....45.9 per cent
Compounding may reduce it to.....39.9 per cent

Our European railroad brothers are fully alive to the advantages of using a condensing engine on the locomotive, as evidenced by descriptions that have appeared in the technical press in the past year or two.

The performance of the modern steam locomotive in every day service without favorable stage setting is shown in the records of some American roads. On one of them, 26 superheated Consolidation locomotives showed in daily service on a run with long grades of 21 ft. per mile, and average consumption of 63½ lb. of coal per 1,000 gross ton-miles, ranging from 55.8 to 71.7 lb. Still more creditable to the steam locomotives and the men who drive them are the records of individual runners. Engineer *A* in two trips with trains of 2,809 tons consumed 48.7 lb. per 1,000 gross ton-miles; engineer *P* in eight trips with trains of 2,863 tons consumed 58.2 lb.; engineer *R* in fourten trips with trains of 2,411 tons consumed 58.3 lb.

These engines vary widely in thermal efficiency and weights per unit, thus:

	Weight per brake horsepower	Brake thermal efficiency
Automobiles	15 lb.	19.0 per cent.
Diesel four-cycle	370 lb.	35.0 per cent.
Diesel two-cycle	250 lb.	30.0 per cent.

The use of the first type, except perhaps, for short runs in exceptional conditions with light vehicles, is prohibitive on railroads, because although the automobile engine is two and one-third times as efficient as the steam locomotive, the present cost of its fuel is ten times as great.

The Diesel engine, however, shows the highest thermal efficiency of any known engine. Most modern locomotive transforms but about 8.1 per cent of the heat energy of fuel into work; the Diesel transforms 35 per cent, or over four times as much. Its fuel (crude oil, commonly called Diesel oil) is not converted into gas as in gasoline engines, but is burned in the cylinder in the form of spray, and the expansive force of the products of combustion provides the motive power. Like the gas engine, however, it cannot start itself but must use some form of variable speed transmission to start trains; the best way so far devised consists of electric transmission, but the combined engine and generator plants have proved so heavy as to bar its use for heavy traction. Because of its high thermal efficiency, the Diesel engine offers opportunity to make great savings, and its future is very hopeful.

A locomotive of this type now being built for the Southern Pacific by the Baldwin Locomotive Works seems to have overcome these handicaps and will soon be ready for trial.

The designs of an Italian Diesel locomotive show the following:

Weight in operation, approximately..... 117 tons
Tractive force at 18½ m.p.h..... 19,840 lb.

The locomotive is started by highly compressed air stored in tanks and fed to cylinders at each end of the locomotive, which start it until sufficient speed is attained to start the Diesel engines; when the compressed air is cut off. The air tanks are recharged by means of a connection with the main engines.

The estimated fuel saving over a steam locomotive is 66 2/3 per cent. This design shows progress in adapting the Diesel engines to locomotives of serviceable commercial sizes, particularly in solving the problem of weight, as the weight of a steam locomotive and tender to develop about 20,000 lb. tractive effort is 150 tons.

The hope of the railroad executive for conserving fuel lies in:

1—Substituting hydro-electric current for steam, as our best steam locomotives can now fully equal the efficiency of electric locomotives using current generated in steam power stations.

2—Substituting compound condensing engines for the simple engines now used. From progress made in Europe, the solution of this problem appears encouraging.

3—The discovery of a cheap, high-gravity fuel that can be used in some such engine as is used on automobiles and airplanes.

4—The reduction of the weights of Diesel engines sufficiently to permit of their use as locomotive engines and the development of a satisfactory variable speed transmission which will weigh very much less than an electric generator and motor.

A Diesel-electric locomotive built in Germany for the Russian government shows an overall efficiency between 21 per cent and 27.4 per cent. A steam locomotive tested at the same laboratory two days later averaged a total efficiency from 7.6 to 8.67 per cent. The fuel consumption of the Diesel-electric locomotive was about one-third that of the steam locomotive.

Increasing Demand for Trained Men

In a special report published in 1923, the National Industrial Conference Board appointed a committee to determine among other things:

1—Do the industries in the United States need more or fewer engineers than the number now being graduated from engineering schools and colleges?

2—What kind of men do the industries require from the engineering schools and colleges, and what should be the nature of their education?

"The expansion of industry has been accompanied by vastly increased complexity of industrial operations, and the grouping of greater numbers of workers in corporate units has placed upon employers an increased social responsibility toward their employees and toward the life and affairs of the community. All of these changes have created problems of human, social and political relationships in which industry and society as a whole have become increasingly dependent upon trained technical and administrative leaders. Solutions to these problems have been sought by railroad executives in the establishment of pensions for super-annuated and incapacitated workers; in hospital departments, to furnish hospital service on the payment of nominal fees; by the establishment of group life insurance plans whereby employees, regardless of age and without physical examination, receive the benefits of life insurance at approximately one-third the cost of the current commercial rates; and by the establishment of rest and reading rooms at terminals where no opportunities exist for relaxation after working hours."

An examination of the personal records of the chairmen and presidents of the railroads of the United States shows that in 1922, out of 32 chairmen, 11, or 34 per cent, had risen from the engineering department, and out of 171 presidents, 33, or 19 per cent, had risen from the ranks of engineers. Based as they are on data taken from census reports, the conclusions of the National Industrial Conference Board show increasing demands for the services of trained men, and furnish the most reliable and valuable information obtainable on the matters before us.

As to schools, it says: "It is the business of the schools to train young men into fertile and exact thinkers, guided by common sense, who have a thorough knowledge of natural laws and of the means for utilizing natural forces for the advantage of men and the advancement of civilization. In other words, it is the business of engineering schools to produce, not finished engineers, but young men with a great capacity for becoming engineers, the goal being attained by the graduates only after years of development in the school of life."

Although a good technical expert may not develop into a good executive, nevertheless, successful administrators should have certain characteristics, such as a good grasp of the fundamentals of science, the ability to think logically and quantitatively, exactness of method and power of analysis, the habit of looking forward, sound economic theories, an unlimited capacity to learn, pronounced firmness combined with high sense of fairness and charity needed to control men, and the ability to write and speak clearly and correctly.

F. B. Jewett, vice-president of the American Telephone & Telegraph Company and president of the Bell Telephone Laboratories, Inc., expresses these views: "Since engineering schools are the places where we expect to turn out men who are going to guide technical industries, we should turn out men who know the principles of the fundamental sciences; who know the method of combining fundamental sciences with the dollar and cents proposition and know English in a way to enable them to express clearly what they know, so that others may profit by it, because it does none of us very much good to be ever so wise if we cannot express our ideas to others.

"It seems to me that if the engineering schools of the future are going to perform their function for the industries they have got to get closer to the proposition of teaching and really inculcating the fundamentals. Let the matter of trying to make executives go, if you will. The men of executive ability will come to the fore in the general run of things, I think, provided the Lord gave them the right human traits and provided they have a thorough grounding in the fundamentals."

E. M. Herr, president of the Westinghouse Electric & Manufacturing Company, says: "There is no royal road, to my mind, to a place of commanding importance in industry, or in any other business, and I do not believe that it is the function of educational institutions to try to teach young men to become captains of industry and administrators, or occupy very great and important executive positions."

"While there is general agreement on this view that one of the leading essentials in education in relation to industry is an adequate training in and knowledge of fundamentals, there is wide variation in the meaning of the term 'fundamentals.' From the point of view of the industrialist, the term 'fundamentals' means a general groundwork of useful knowledge but, more especially, a training in the power to use this knowledge in effective thought and action.

"The fundamentals of engineering training may be stated as follows:

(a) Mathematics;
(b) The important principles of physics (mechanics, heat, light, sound, electricity, magnetism), chemistry, biology and geology, the interrelations of natural phenomena and the application of these principles to practical problems;
(c) The principles of economics and their application to industry and commerce;
(d) The principles that govern the relations between people, not only as applied to managers and men, but also as applied to governments and society;
(e) The history of nations;
(f) The art of clear and correct expression in speaking, writing and drawing.

"The relative emphasis to be placed on each of these fundamentals is a matter to be determined for each engineering course."

In emphasizing the importance of training, we must studiously avoid withering the aspirations and stifling the ambition of the large numbers of men in railroad and industrial service who have not had the benefit of over-much school or any college preparation. These men outnumber vastly the high school and college men, and to their credit be it said that the 65 per cent of chairmen and 81 per cent of presidents, remaining after taking account of those that have risen from the ranks of engineer, have been drawn largely from the men who have had none of the benefits of higher education. Without mentioning them, the names of a number of the ablest and most distinguished railroad chairmen and presidents in the United States, who have by sheer ability and pluck risen from lowly ranks and have actually built their own careers and builded admirably well, suggest themselves.

Coal Situation Hurts Pennsylvania

Earns $3.82 *per share on stock in* 1924, *as compared with* $4.49 *in* 1923—*Moves* 14.8 *per cent less coal*

THE Pennsylvania Railroad Company in 1924 had a net income of $38,134,677, equivalent to $3.82 per share or to 7.64 per cent on the company's outstanding $499,173,400 $50 par value capital stock. Inclusive of a special dividend of $8,000,000 from the Pennsylvania Company, all the stock of which is owned by the Railroad Company, the net income was $46,134,677, equivalent to 9.24 per cent on the capital stock. In 1923, the Pennsylvania had a net of $51,538,078, equivalent to $5.16 per share or, excluding $6,681,047 received in settlement of federal control, to $4.49 per share.

Non-Union vs. Union Coal

In a review of the operations of the Norfolk & Western appearing in last week's issue of the *Railway Age*, something was said of the manner in which the carriers in the Pocahontas district had been favored by the new relationship existing between the union and non-union coal mines as a result of the Jacksonville wage agreement.

It was noted, first, that whereas formerly union coal constituted about 60 per cent of the country's total coal production and non-union coal about 40, under the new conditions these proportions had been reversed. It was further shown that whereas the total revenue coal loadings in the United States were 10 per cent less than in 1923 and 15 per cent less than in 1920, the loadings in the Pocahontas region were 16 per cent greater than in 1923 and 37 per cent greater than in 1920. The Allegheny region, in which the Pennsylvania is the largest carrier, had coal loadings in 1924, 19 per cent less than in 1923 and 23 per cent less than in 1920.

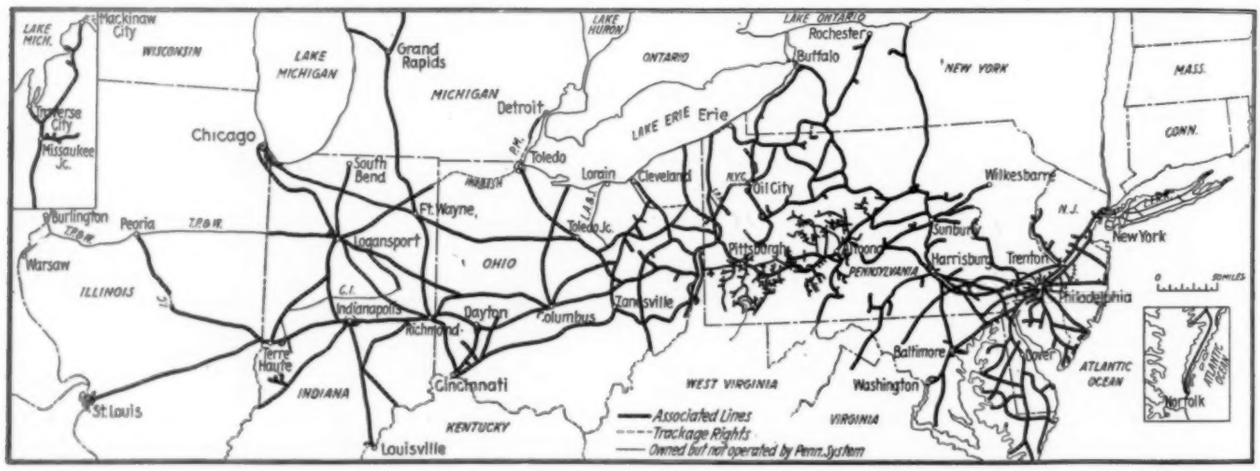
The handicap applying to mines in the union coal fields has been further reflected in the recently issued annual reports of two of the most important coal companies, both of which are now paying the union scale of wages. The Consolidation Coal Company, which operates mines in the Pennsylvania, Maryland and West Virginia fields, reported for 1924 a net loss of $1,387,723 from operations and a loss of $2,125,650 after depreciation, depletion and taxes, and 1924 was next to the worst in the company's history.

The Pittsburgh Coal Company, which has an investment of approximately $164,000,000 and which had, in 1924, a gross income of over $44,000,000, had, in 1924, after interest charges on about $11,500,000 of indebtedness, net income of but $281,887 or less than 0.2 per cent on the net investment. This was the poorest year the company ever had.

Benefited Some from N. & W. Traffic

All of these things apply to the situation of the Pennsylvania Railroad. It is true that the Pennsylvania has benefited to some extent from the advantages accruing to the non-union coal fields. This results from its one-third interest in the Norfolk & Western and the community of interest which enables the Pennsylvania to secure the major proportion of the increased westbound tonnage which the Norfolk & Western is now delivering at Columbus, Ohio, for movement to the lakes or for movement to the so-called Central Competitive District hitherto served more largely by the mines in southern Illinois. How this affects the Pennsylvania is shown to some extent by the figures of coal dumpings at Lake Erie ports. The Pennsylvania has docks at Sandusky, Cleveland, Ashtabula and Erie. The logical port towards which N. & W. coal received from the latter carrier at Portsmouth would be directed is Sandusky. At that port in 1924 the Pennsylvania dumped into lake vessels 4,331,638 tons of coal, as compared with 3,103,822 tons in 1923 and with 2,893,994 tons in 1922. Whereas, in the case of this port there was a substantial increase, at the other ports there was a substantial decrease. At Cleveland, the coal dumped in 1924 at the Pennsylvania dock totaled 1,591,574 tons as compared with 2,071,997 tons in 1923; at Ashtabula the tonange dumped was 1,275,073 tons, comparing with 2,241,626 tons in 1923.

Naturally, since the Pennsylvania serves extensive coal



The Pennsylvania

fields itself, it follows, considering the size and importance of these fields, that the N. & W. coal could not have exercized such a comparatively large influence in the Pennsylvania's coal business. The more important angle, therefore, is the fact above noted that in 1924 the coal loadings in the Allegheny district were 19 per cent less than in 1923 and the situation reported by the two coal companies. In 1923, bituminous coal contributed 94,130,325 tons of Pennsylvania traffic and constituted 38.23 per cent of its total revenue tonnage. The tonnage of bituminous in 1924 was only 80,175,322. It was 37.36 per cent of the road's total tonnage but the amount of it was 13,955,003 tons or 14.8 per cent less than in 1923. We do not expect prosperity in a carrier when in a particular year it moves 14.8 per cent less of the most important commodity which it carries.

TABLE I—PENNSYLVANIA RAILROAD COMPANY—SELECTED ITEMS FROM INCOME ACCOUNT

	1924	1923	Increase or decrease
Average mileage operated	10,575.00	10,576.92	—1.92
Railway operating revenues	$645,299,176	$721,397,409	—$76,098,232
Maintenance of way	$74,025,530	$85,383,281	—$11,357,751
Maintenance of equipment	158,884,751	188,577,704	—29,692,953
Transportation	250,364,384	281,851,983	—31,487,598
Total operating expenses	$517,450,673	$590,518,030	—$73,067,358
Operating ratio	80.2	81.9	—1.7
Net revenue from operations	$127,848,503	$130,879,378	—$3,030,875
Railway tax accruals	$30,457,970	$32,690,522	—$2,232,552
Railway operating income	$97,177,586	$98,064,258	—$886,672
Hire of equipment, Dr. bal.	$18,034,348	$13,927,104	$4,107,245
Joint facility rents, Dr. bal.	343,325	590,487	—247,162
Net railway operating income	$78,799,913	$83,546,668	—$4,746,755
Non-operating income	$31,003,921	$33,262,611	—$2,258,690
Gross income	$109,808,834	$116,809,278	—$7,000,444
Rent for leased roads	$38,291,126	$35,246,256	$3,004,870
Interest on funded debt	30,527,956	28,062,553	2,465,403
Total deductions from gross income	$71,674,157	$65,271,200	—$6,402,957
Net income	$38,134,677	$51,538,078	—$13,403,401
Disposition of net income—			
Income applied to sinking funds, etc.	$3,419,466	$3,498,243	$78,777
Dividends on common stock, 6 per cent	$29,950,404	$29,950,404	.....
Construction expenditures during current year, borne by Pa. R. R. Co.	$452,371	$1,614,154	—$1,161,783
Total	$33,822,241	$35,062,801	—$1,240,560
Balance	$4,312,436	$16,475,277	—$12,162,842
Add:			
Special dividends on stock of Pa. R. R. Co.	$8,000,000	.....	$8,000,000
Less:			
Construction expenditures, etc., borne by Pa. R. R. Co.	$1,262,655	$1,209,660	$52,995
Balance transferred to profit and loss	$11,049,781	$15,265,618	—$4,215,837

Revenues and Expenses

Taking the situation as a whole, the Pennsylvania had, in 1924, operating revenues totaling $645,299,176, this total being $76,098,232 or 10.5 per cent less than in 1923. The decrease in freight traffic or in ton-miles was 14.2 per cent. There was a reduction of 3,323,020 tons or 22.2 per cent in anthracite coal; of 4,325,740 tons or 36.5 per cent in coke; of 4,883,707 tons or 40.7 per cent in iron ore, and of 1,362,782 tons or 14.7 per cent in products of iron. Passenger mileage decreased 5 per cent.

A proportion of the loss in revenues was made up by savings in operating expenses. These expenses totaled $517,450,673 and were $73,067,358 or 12.6 per cent less than in 1923. There was a reduction of $11,357,751 or 13.3 per cent in maintenance of way expenses, of $29,692,953 or 15.7 per cent in maintenance of equipment and of $31,487,598 or 11.2 per cent in transportation expenses. These decreases were, in part, due to the decrease in traffic and, in the case of transportation expenses, assisted further by the decreased consumption and cost of fuel. The opening ratio of 80.2 in 1924 was the lowest reported since the war. It compared with 81.9 in 1923; 82.6 in 1922 and with 87.8 in 1921.

TABLE II—RETURN ON THE INVESTMENT IN ROAD AND EQUIPMENT PENNSYLVANIA RAILROAD SYSTEM

Year ended Dec. 31	Investment in road and equipment	Net railway operating income	Net railway operating income per cent. of investment in road and equipment
1910	$1,533,111,360	$76,966,497	5.02
1911	1,568,863,769	74,020,181	4.72
1912	1,606,721,857	81,089,138	5.05
1913	1,681,779,771	67,850,644	4.03
1914	1,710,368,222	61,980,355	3.62
1915	1,739,081,326	83,747,573	4.82
1916	1,799,055,282	102,201,922	5.68
1917	1,872,315,915	77,800,154	4.16
1918	1,952,017,162	*27,017,878	*1.38
1919	2,069,968,807	*10,034,053	*0.48
1920	2,092,052,738	Def. *62,742,376	....
1921	2,102,421,811	40,859,954	1.94
1922	2,112,565,888	79,832,502	3.78
1923	2,196,947,406	88,065,480	4.01
1924	2,258,292,092	84,010,909	3.72

*Based on result of Federal operation and taxes and expenses of the corporations. Investment in road and equipment above stated does not include material and supplies or working capital. Net railway operating income includes income from lease of road.

The net revenue from railway operations of $127,848,503 was but $3,030,875 or 2.2 per cent less than in 1923. This small decrease was not carried down to net railway operating income because there was an increase of $4,107,245 in the debit hire of freight car balance. The Pennsylvania had a debit balance in 1924 of no less than $18,034,348. However, in 1924 the company placed orders for 22,000 new freight cars on which, naturally, it did not receive delivery until late in the year or in 1925. It added to its equipment in 1924, 14,716 new cars and has since added the 5,000 or so remaining on its unusually large orders.

The 1925 report should show a substantial reduction in the debit per diem balance.

The net railway operating income in 1923 was $78,799,913. This compared with $83,546,668 in 1923 and was about 5.7 per cent less. The Pennsylvania's net corporate income in 1924 totaled $38,134,677 as compared with $51,538,078 in 1923, thus showing a reduction of $13,413,401. Because of the inclusion of $6,681,047 in 1923 in connection with the federal control settlement, the actual loss in net income in 1924 as compared with 1923 was $6,722,354, most of which was constituted in the decrease of net railway operating income. However, there was an increase of $2,465,403 in interest charges (totaling $30,527,956) due largely to the issue of $35,850,000 equipment trust certificates and $50,000,000 5 per cent secured gold bonds on November 1.

The Pennsylvania Railroad Company itself operates

TABLE III—PENNSYLVANIA RAILROAD SYSTEM COMPARED WITH ALL CLASS I RAILROADS IN UNITED STATES YEAR 1923

	Per Cent
Miles of road	4.95
Miles of track	7.09
Investment in road and equipment	10.21
Revenue ton-miles	11.82
Passenger miles	17.27
Total number of employes	13.18
Total operating revenues	12.20
Total passenger equipment cars	15.16
Total freight equipment cars	10.96
Total locomotives	11.74
Total tractive power of locomotives	13.55

10,575 miles of railroad. The Pennsylvania System operates a total of 11,672 miles. Whereas the net operating income of the Railroad Company was, in 1924, $78,799,913, the net operating income of the system as a whole was $84,010,909, equivalent to 3.72 per cent on the system's property investment. In 1923, the return on the investment was 4.01 per cent.

Capital Improvements

A system like the Pennsylvania must be continually spending large sums for the improvement of the property.

TABLE IV—PENNSYLVANIA RAILROAD SYSTEM, 1924 COMPARED WITH 1914

	Years ended Dec. 31		Per cent increase over 1914
Trackage	1924	1914	
Miles of first main track operated (including 70 miles of canals and ferries)	11,672	11,599	0.6
Miles of all tracks operated	27,663	25,850	7.0
Investment			
Gross investment in road and equipment	$2,258,292,092	$1,710,368,222	32.0
Other investments (book value)	157,986,134	183,255,041	D. 13.8
Total investment	2,416,278,226	1,893,623,263	27.6
Capitalization			
Total capital stock	$1,099,944,168	$1,026,645,943	7.1
Total funded debt	1,016,681,314	714,338,801	42.3
Total capital obligations	2,116,625,482	1,740,984,744	21.6
Total capital stock owned by companies in system	502,951,009	400,699,484	25.5
Total funded debt owned by companies in system	68,624,096	66,311,179	3.5
Total capital obligations owned by companies in system	571,575,105	467,010,662	22.4
Total capital stock held by public	596,993,159	625,946,459	D. 4.6
Total funded debt held by public	948,057,218	648,027,623	46.3
Total capital obligations held by public	1,545,050,377	1,273,974,082	21.3
Ratio of capital stock to total capital obligations held by public	38.64	49.13	D 21.4
Equipment			
Number of locomotives owned	7,647	7,400	3.3
Total tractive power (pounds)	348,245,311	245,987,130	41.6
Number of freight cars owned	266,367	272,547	D. 2.3
Total capacity (tons)	14,208,743	12,656,335	12.3
Number of pass. train cars owned	8,190	6,818	20.1
Total seating capacity (persons)	342,942	325,518	5.4
Employes			
Average number of employes	218,626	207,508	5.4
Total compensation	$376,978,292	$175,448,591	114.9
Revenues and expenses			
Operating revenues	$698,713,249	$351,513,252	98.8
Operating expenses (including taxes, equipment and joint facility rents, etc.)	614,702,340	289,532,897	112.3
Net railway operating income	84,010,909	61,980,355	35.5
Per cent return on investment in road and equipment	3.72	3.62	2.8
Freight Traffic			
Revenue ton-miles	41,920,099,245	36,895,899,049	13.6
Average revenue per ton per mile (cents)	1.088	0.625	74.1
Average train load—tons (revenue freight)	775	640	21.1
Average car load—tons (revenue freight)	28.4	26.8	6.0
Passenger Traffic			
Passenger miles	6,386,432,558	4,559,891,927	40.1
Average revenue per passenger per mile (cents)	2.785	1.830	52.2
D—Signifies Decrease.			
THE PENNSYLVANIA RAILROAD COMPANY			
Number of Stockholders	145,174	91,571	58.5

The net increase in the property investment in 1924 was not particularly great considering the size of the Pennsylvania System. The Railroad Company's total increase was $43,883,869, of which $8,300,000 was for roadway and structures and $34,500,000 for equipment. The latter included only part of the new cars ordered during the year. There were included, however, over 100 new locomotives, all built in the company's own shops at Altoona. A disconcerting feature to the Pennsylvania management must be the large sums which it has to devote to non-lucrative improvements resulting from the desire to manifest a due regard for the obligations to the public. The company now has in hand with others the completion of the new Chicago Union Station for which $67,000,000 of bonds have already been issued, guaranteed by the owner companies. Extensive passenger station improvements are planned for Philadelphia and also for Pittsburgh. The stockholders at their annual meeting will be asked to approve an increase in the company's indebtedness of $100,000,000 to allow for future progressive development of the property as need is evidenced.

President Samuel Rea, in his annual report, always gives much interesting comment on the situation of his company in particular and the railway situation in general. Of special interest are some of the comparisons showing the place of the system which he directs in the entire transportation machine.

Comments by President Rea

In his report Mr. Rea has considerable to say concerning the improvements at Chicago and the plans in contemplation for Philadelphia and Pittsburgh. He has included interesting paragraphs concerning the coal situation, the general railroad situation, motor truck and bus competition and railroad consolidation.

Concerning the general railroad situation, he says:

"During 1924 the railroad service generally was continued at a very high state of efficiency. The service rendered was equal to all demands and was conducted with economy. There was less interference from unwise legislation, and the regulating bodies as a whole were more sympathetic of the problems the railroads must meet. It is not to be inferred from this that the railroads can relax their vigilance in the protection of their earnings and property, nor of the interests of the owners and employees and the public which they serve. Conclusive proof of this can be readily furnished by the number of unfriendly legislative measures which were introduced in last year's federal and state legislatures, with the evident desire to continue railroad rates and service as political questions, and to further restrict the conduct of railroad business in the manner calculated to render the best service to the public.

"The national platform of one of the political parties in the last presidential campaign, plainly brought before the people of the United States the question of government ownership and operation, coupled with the attempt to undermine the value of the citizens' investment in the railroads of the country. The dangerous elements of the situation were so well understood by the country at large, that an overwhelming majority voted against the party which presented that unsound proposition, and gave a clear mandate for sound and orderly government and for lawful protection of the rights of individuals and property. Satisfactory railroad service is not a political question, but it is chiefly an economic question and one of responsibility. Railroads cannot produce successful results except by obtaining fair rates and fair returns so as to preserve sound credit; by giving the public the best service at reasonable rates; and by having loyal employees, working under experienced management in directing operation, maintenance and improvement. The railroads fully appreciate that informed public opinion desires to have them accorded just treatment, and they have by improved service and larger expenditures for additions and betterments and new equipment, expressed their faith in the fairness of the American people.

"This constructive attitude of the government, with increased prosperity, has given an impetus to ownership of stock and securities in all public service corporations by the citizens, so that the ranks of their investors have greatly increased and include numbers of people in all walks of life. This ownership by the citizens and their institutions, and their direct interest in railroad operations, certainly cannot be improved upon by government ownership. The return earned upon the railroad investment as a whole is still clearly inadequate to attract continuously at reasonable interest or dividend rates, the new capital essential to expand and improve railroad service on anything like the scale which the growth of the country demands. The investment in road and equipment, including working capital, taken as a whole, is conservatively carried on their books, when compared with the present day cost of reproduction, yet because of the present heavy operating costs and taxes the return earned thereon was only about 4.33 per cent in 1924, notwithstanding the greater economies enforced in the transportation service. This return, and those of several preceding years, are much below the figure of 5¾ per cent fixed by the Interstate Commerce Commission under the provisions of the Transportation Act of 1920 as a reasonable return on the railroad investment by groups or districts."

Julius Kruttschnitt to Retire

Will leave leadership of Southern Pacific on May 31 under pension rules—New Organization announced

JULIUS KRUTTSCHNITT, chairman of the executive committee and of the board of directors of the Southern Pacific Company, announced at the annual organization meeting of the board, held on April 9 for the purpose of electing officers for the ensuing year, that he had decided to retire on May 31 next under the pension rules of the company.

Mr. Kruttschnitt is in his 71st year, having been in the service of the Southern Pacific Lines continuously for 48 years.

With the retirement of Mr. Kruttschnitt there passes from active railroad life one of its most notable figures. Few, if any, railroad executives have possessed the combination of practical skill, technical training and scientific knowledge that with indefatigable industry have made his career one of extraordinary achievement.

Mr. Kruttschnitt's detailed knowledge of the properties under his jurisdiction has been so remarkable as to cause wondering comment on the part of those not familiar with his extraordinary capacity for acquiring and retaining facts; equally remarkable is his knowledge of the science of railroading in general, expressed in his testimony as representative of the railroads before the Senate, the Interstate Commerce Commission and other public bodies, his many addresses upon a wide range of railroad topics, and his scholarly contributions to magazines and technical journals upon questions relating both to railroad policies and operations.

Since Mr. Kruttschnitt became chairman of the board in 1913, the Southern Pacific Lines have grown from about 10,000 miles and $143,000,000 gross annual earnings to about 15,550 miles and gross annual earnings in excess of $300,000,000 in 1924. Significant of his executive capacity is the fact that he has been able to adapt successfully to this great growth the organization of 1913 with substantially the same personnel of officers except as death or age has taken them from the service.

Mr. Kruttschnitt is an alumnus of Washington and Lee University, graduating in 1873 with the degree of Civil Engineer. He prepared for college at Professor Romain's School in his native city of New Orleans. For five years after leaving college he taught at the McDonogh School for boys near Baltimore, where he was the assistant to the principal, Colonel William Allen, and during which time he worked to increase his engineering knowledge.

Employed by Southern Pacific Since 1878

His opportunity to realize his boyhood ambition to become a railroad man came in 1878 when he entered the service of the Morgan's Louisiana & Texas Railroad & Steamship Company (now a part of the Southern Pacific Lines) as resident engineer in charge of construction work. Completing that work in 1880, he was retained as roadmaster, receiving successive promotions as assistant chief engineer and general roadmaster, chief engineer and superintendent, assistant general manager of the Southern Pacific Lines East of El Paso, and in 1887 was made general manager of that system. In 1895 his jurisdiction as general manager was extended over the entire Southern Pacific System with headquarters at San Francisco. This position, with additional responsibilities as vice-president and later as assistant to the president, was retained until 1904 when he was moved to Chicago and was placed in charge of the operation and maintenance of the combined Union Pacific and Southern Pacific properties with title of Director of Maintenance and Operation. On the separation of those systems in 1913, Mr. Kruttschnitt was elected to his present position of chairman of the executive committee of the Southern Pacific Company with headquarters at New York.

The properties of which Mr. Kruttschnitt is the directing head embrace 14,646 miles of steam and electrically operated railroad and 887 miles of electric interurban lines, together with lines of steamships operating between New York and New Orleans, New York and Galveston and Galveston and Tampico, Mex.

Mr. Kruttschnitt is a director and member of the executive committee of the Erie, Western Union Telegraph Company and United States Mortgage & Trust Company. He was a member of the Railroad's War Board, is a past president and present member of the executive committee of The American Railway Association and of the Association of Railway Executives.

William Sproule New Southern Pacific Head

The board of directors in accepting Mr. Kruttschnitt's decision to retire changed the present plan of operating the Southern Pacific properties, and the supervision of operations heretofore exercised by Mr. Kruttschnitt will, after May 31, be under the direction of the president, William Sproule, in San Francisco. The board at its meeting Thursday enlarged his authority to deal with the situation accordingly, making him the chief executive operating officer of the Southern Pacific Company and placing him in charge of all departments.

William Sproule, on whose shoulders falls very largely the burden carried by the retiring chairman, first entered the service in 1882, in the freight department in San Francisco, and since that time has been in the traffic and executive departments, with the exception of five years in New York in the last year of which he was president of Wells Fargo Express Company, from which he resigned to become president of the Southern Pacific Company in 1911, the place he has since held. Mr. Sproule has held successively the positions of freight clerk, assistant general freight agent, general freight agent, freight traffic manager, and since 1911 the presidency of the company. He has been signally successful in establishing policies that have gained and maintained public confidence, and has made the railroad company a strong factor in the development and progress of the territory it serves. He has served in many public capacities, and is now a member of the Federal Reserve Bank of the Twelfth Federal Reserve District and a director of the Golden Gate Park Commission of San Francisco.

New Chairman of the Executive Committee

The general office of the company and its financial headquarters will remain in New York, with Henry W. de Forest as chairman of the executive committee and of the board of directors, both of the Southern Pacific Company and of its various subsidiaries, succeeding Mr. Kruttschnitt in these positions. Mr. de Forest has been a member of the executive committee and the board of directors

of the Southern Pacific Company for many years. Since 1913 he has occupied the position of vice-president and has been in charge of the financial interests of the company. Mr. de Forest, in addition to his Southern Pacific connections, is also chairman of the board and a director of the Pacific Oil Company, a director and member of the executive committee of the Illinois Central and its affiliated companies, of the Delaware & Hudson, the Pacific Mail Steamship Company, the Western Union Telegraph Company, Wells Fargo & Co., the American Railway Express Company, the National Bank of Commerce, the Hudson Trust Company of New Jersey, the Niagara Fire Insurance Company, a director of the United States Trust Company, and Trustee of the Bank for Savings. Mr. de Forest is a member of the law firm of de Forest Bros., at 30 Broad Street, New York City.

The office of vice-chairman has been created and will be filled by A. D. McDonald, who has been vice-president and controller of the company for 12 years, and who has been in the service of the company for 25 years, having risen from the ranks through the accounting department, his first position having been as a clerk in the Houston offices. Mr. McDonald, acting under the chairman, will have charge of the affairs of the company's general offices in New York City and will act as his representative and of the executive committee.

New Traffic Department Leadership

Coincident with the transfer of the chief executive offices to San Francisco, the position of director of traffic, now held by L. J. Spence, will be discontinued. Separate traffic jurisdictions will be established covering the Pacific System, the Texas and Louisiana lines and the Southern Pacific Steamship Lines, under the direction of local traffic officers, all being co-ordinated with respect to through traffic and that interchanged with other lines under the control and direction of T. M. Schumacher, vice-president in charge of traffic, with headquarters in Chicago. Mr. Spence will be the executive officer and head of the Southern Pacific Steamship Lines and in a consulting capacity with respect to questions of importance involving consolidation and valuation when called on by the Chairman or the President. The activities of the Southern Pacific Steamship Lines, operating between Gulf and Atlantic Coast ports, have been recently very considerably enlarged. Mr. Spence has been with the company 40 years, serving a large part of that time in the traffic department, and more recently in connection with steamship affairs, taking on executive duties.

Mr. Schumacher, vice-president in charge of traffic, came with the Southern Pacific Company when it acquired the El Paso & Southwestern System last November, and has since been occupying the position of executive vice-president. He was president of the El Paso & Southwestern lines for some years. Previously he had had a great many years' experience both on the Pacific Coast and in the East in different departments of various railroad lines, including the Southern Pacific, and was assistant to J. C. Stubbs, then Director of Traffic of the Southern Pacific and Union Pacific Systems in Chicago, and is, therefore, by experience well qualified to carry on with the Southern Pacific.

Other Changes

Paul Shoup, now vice-president at San Francisco, under the new organization becomes executive vice-president, and has immediate charge of the management and operations of the railroads west of Ogden, Utah, and Tecumcari, N. Mex., with headquarters at San Francisco. Like the other executive officers, Mr. Shoup has been long in the service of the company, entering it as a clerk in the office at San Bernardino, Calif., in 1891.

J. P. Blair remains as general counsel of the company, with charge of the legal business of the company in New York, neighboring states and the home state of the Southern Pacific Company—Kentucky. He will also act as counsel for the Southern Pacific Steamship Lines.

G. W. Mulks has been elected Controller at New York, to succeed Mr. A. D. McDonald when the latter assumes the duties of Vice-Chairman. Mr. Mulks is at this time assistant controller, and has been in the service of the Union and Southern Pacific Lines for more than 40 years.

Hugh Neill, the present secretary of the Southern Pacific Company, and its subsidiary companies, has been elected vice-president and secretary. Mr. Neill has been in the service of the company for about 25 years and has served as secretary for about 13 years.

Under the new organization the office of vice-president W. A. Worthington will be in San Francisco instead of New York, Mr. Worthington being attached to the staff of the president. At the same time the offices of F. W. Mahl, director of purchases, and of Mr. C. R. Harding, consulting engineer, will likewise be moved to San Francisco.

Mr. W. R. Scott will remain as the president of the Lines in Texas and Louisiana with the same duties and responsibilities as heretofore.

H. B. Titcomb will, in like manner, remain as president of the Southern Pacific Railroad Company of Mexico.

The changes are effective June 1.

Electrification of Great Indian Peninsula's Bombay Suburban Lines—a Junction at Kurla

General News Department

The St. Louis Railway Club at its annual meeting on April 10 elected officers as follows: President, R. C. White, assistant general manager, of the Missouri Pacific; first vice-president, W. E. Williams, manager, department of personnel, of the Missouri-Kansas-Texas; second vice-president, E. H. Harman, assistant to general manager of the Terminal Railroad Association; third vice-president, R. J. Lockwood, assistant manager of the United Railways; and secretary-treasurer, B. W. Frauenthal, general traffic agent of the United Railways.

New England Railroad Club Meeting

C. D. Young, stores manager of the Pennsylvania, will address the New England Railroad Club at the Copley-Plaza Hotel, Boston, on April 14, on the subject of the stores department of the Pennsylvania System. Dinner will be served at 6:30 p. m. and the meeting will be called to order at 7:45.

New York to St. Louis, 22 Hours, 10 Minutes

A special train from New York to St. Louis over the New York Central and the Big Four, consisting of a locomotive and six coaches, which was run on March 15 for Mrs. Julius Walsh and party, made the trip through in 22 hours, 10 minutes. The distance is 1,158 miles, making the average rate of speed 52¼ miles an hour. The train started from New York at 2:25 p. m. Eastern time, and arrived at St. Louis at 11:35 a. m. Central time, on the sixteenth.

Peace River Railroad Facilities

During the last month many questions have been asked in the Canadian Parliament about the progress of the negotiations between the Canadian Pacific and the Canadian National for some plan whereby larger transportation facilities can be provided for the fertile Peace river area in Northwestern Alberta. Last week Donald M. Kennedy, member for West Edmonton, asked the following question: "Does the Minister of Railways and Canals think there is a probability of the heads of the Canadian National and the Canadian Pacific coming together in a joint agreement regarding the Peace river transportation problem?"

The Minister, in reply, said: "I would not like to say that until I got a reply to that question or something to the same effect from the gentlemen themselves. They were, if possible, to agree on a joint report of suggestion. I may say this, that if some suggestion does not come from them shortly I will, I think, ask them to join in another conference to discuss the matter again."

Maintenance of Doors, Door Fixtures, Etc., on Freight Car Equipment

Circular No. D. V.-393 has recently been issued by the Mechanical Division of the A. R. A. calling attention to the lack of maintenance of side doors, end doors, roof doors and hatch covers, door fixtures, tracks, guides, brackets, stops and sealing devices on house car equipment.

This lack of maintenance has resulted in a large number of claims for damage to lading by the elements, the pilfering of lading occasioned by easy access to cars, as well as the resultant loss of doors and liability by accidents. In many cases doors found off the track have been rehung simply by forcing them into place without making necessary repairs to the loose or otherwise defective parts which permitted the door to become displaced. Complete repairs of a permanent and substantial character should be made to cars, either owned or foreign, when found with defective door fixtures or sealing devices. Under no condition should cars having defective doors, fixtures or sealing devices, be loaded.

Attention is further directed to the necessity of car owners adopting standards for maintenance that will insure doors and hatch covers on house car equipment being of such design as will prevent their readily becoming defective or losing off in ordinary service.

It is requested, therefore, that car owners inaugurate an intensive campaign at all repair points, freight houses and loading stations, to the end that a decided improvement may be effected, in order to avoid necessity for the establishment of a rule which would allow refusal of such defective cars when offered in interchange under load.

Exhibition of Railway Art Posters

The Bureau of Railway Economics, Washington, D. C., has on exhibition upwards of 250 large art posters issued by the publicity departments of the railways of more than ten countries. The posters cover a wide range of subjects and include symbolical allusions to industries as well as artistic descriptive picturing of playgrounds and places of historic interest. Among them will be found the works of such prominent artists as Maurice Griffenhagen, R. A.; Sir David Murray, R. A.; Sir William Orpen, R. A.; Adrien Stokes, R. A.; Frank Brangwyn, R. A.

Beginning on April 20 the pictures will be displayed in one of the rooms of the Bureau in the Transportation Building, Washington, Room 1030. Railroad men who purpose attending the International Railway Association Congress in London will find here an enlarged conception of foreign railway advertising.

The exhibit has been prepared and is being shown by the library of the bureau, assisted by W. E. Shoults of the Bureau's foreign statistical department, and copies of the catalogue which has been prepared may be obtained either by addressing the library or on application to Mr. Shoults in Room 1015 of the bureau.

Why Quebec Doesn't Want the T. & N. O. Extension

Considerable trouble has developed between the Provincial Governments of Ontario and Quebec over the refusal of the latter to grant the former permission to build an extension of the Temiskaming & Northern Ontario which is owned by the Province of Ontario into the Rouyn gold fields in Northwestern Quebec. Two weeks ago Premier L. A. Taschereau of Quebec gave an interview to Commissioners George Lee and L. T. Martin of the Temiskaming Railway Board and told them Quebec was opposed to such a move. Premier G. Howard Ferguson of Ontario later stated he thought there was a misunderstanding in Quebec as to the purpose of the proposed road. Then one Toronto newspaper, supporting the Ferguson government, charged that Sir Henry Thornton, president of the Canadian National, was the instigator of the opposition from Quebec to the Ontario project. This Sir Henry promptly denied.

Then late last week Premier Ferguson, of Ontario, sent one of his Cabinet members again to interview Premier Taschereau. Following that second interview Premier Taschereau made public the following statement of Quebec's attitude:

"We discussed together the legal and business aspects of the project urged upon us, involving permission for the Temiskaming & Northern Ontario to enter Quebec so as to tap the Rouyn district.

"We told the honorable Minister from Ontario that there was no feeling of hostility whatever by Quebec against the sister Province, but that on the contrary, we were on the best of terms, and wanted to remain on the best of terms. We pointed out, however, that we have been spending two and a half millions a year in the Temiskaming and Abitibi districts in order to develop these districts, such as by way of building roads, aiding colonization, and the general development of the districts concerned, and that the best of our efforts had been directed to that end.

"We consider that after the sacrifices that we have made, and at a time when we can properly look for some returns to the

(*Continued on page* 954)

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1925

Name of road	Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1924.
Akron, Canton & Youngstown.....Feb.	171	$211,935	$483	$224,011	$32,826	$24,059	$11,004	$66,950	$10,751	$145,590	65.00	$78,421	$65,062	$34,450	$68,411
2 mos.	171	421,922	990	450,863	67,095	49,294	22,072	133,936	21,486	293,883	65.20	156,980	131,225	66,544	108,230
Alabama & Vicksburg.....Feb.	141	192,987	50,354	261,968	32,565	51,950	10,230	94,267	13,618	204,515	78.10	57,453	31,675	38,386	45,538
2 mos.	141	392,726	113,742	547,470	64,813	102,576	19,590	196,457	28,573	415,929	76.00	137,541	78,400	87,377	56,267
Vicksburg, Shreveport & Pacific..Feb.	188	223,934	54,718	298,990	56,300	50,717	11,561	118,358	15,648	253,369	84.70	45,621	25,171	18,879	25,875
2 mos.	188	445,216	125,048	616,186	121,387	111,688	23,595	248,790	33,162	541,901	87.90	74,285	33,431	19,563	18,550
Ann Arbor .....Feb.	293	412,007	26,597	452,867	25,317	86,455	9,661	191,935	14,794	328,162	72.50	124,705	102,684	74,772	31,701
2 mos.	293	806,658	60,128	896,122	51,404	179,891	19,328	401,470	30,708	682,801	76.20	213,321	169,236	113,632	15,076
Atchison, Topeka & Santa Fe.....Feb.	9,186	9,806,081	3,098,141	14,037,642	1,625,436	3,178,578	306,389	4,662,833	408,402	10,132,972	72.20	3,904,670	2,681,685	2,696,883	2,703,421
2 mos.	9,182	20,176,021	6,596,582	29,190,404	3,046,283	6,608,960	673,485	9,908,273	801,884	21,005,659	72.00	8,184,745	5,636,248	5,582,162	4,528,886
Gulf, Colorado & Santa Fe.....Feb.	1,908	1,937,251	234,718	2,312,396	461,044	488,446	45,224	723,238	59,468	1,776,703	76.80	535,693	453,724	328,930	107,197
2 mos.	1,908	4,001,880	542,894	4,825,612	844,745	1,025,113	97,606	1,466,167	132,089	3,564,827	73.90	1,260,785	1,090,280	831,128	262,749
Panhandle & Santa Fe.....Feb.	858	691,276	88,962	824,040	105,259	169,125	8,444	218,748	17,206	518,320	62.90	305,720	234,081	188,707	141,235
2 mos.	858	1,477,089	206,855	1,776,321	174,213	355,857	17,605	473,981	36,103	1,056,745	59.50	719,576	621,188	517,718	370,701
Atlanta & West Point.....Feb.	93	137,569	68,344	237,529	28,853	40,232	9,811	93,709	11,168	188,379	79.30	49,150	37,148	27,339	46,161
2 mos.	93	277,916	145,701	487,463	60,696	86,439	19,590	198,973	21,584	397,192	81.40	90,271	63,058	42,497	70,353
Western of Alabama.....Feb.	133	172,417	67,258	266,367	36,067	46,651	10,907	78,611	10,511	186,914	70.20	79,453	66,283	63,023	63,839
2 mos.	133	335,531	140,296	526,188	73,752	98,800	20,514	162,612	21,167	386,007	73.30	140,181	111,871	104,467	109,460
Atlanta, Birmingham & Atlantic....Feb.	639	382,664	31,429	448,055	80,672	102,107	22,723	181,882	17,060	404,510	90.30	43,545	28,681	—7,289	16,642
2 mos.	639	759,943	75,861	901,395	161,882	197,951	46,021	367,777	33,542	807,317	89.60	94,078	65,351	—2,064	—4,640
Atlantic Coast Line.....Feb.	4,868	5,460,711	2,326,080	8,393,573	856,274	1,215,098	150,810	2,650,674	152,276	5,106,877	60.80	3,286,696	2,785,457	2,580,735	2,500,737
2 mos.	4,868	10,241,495	4,378,293	15,866,475	1,782,309	2,582,820	289,644	5,316,658	304,578	10,422,941	65.70	5,443,534	4,541,394	4,165,238	4,351,960
Charleston & Western Carolina...Feb.	342	300,515	23,780	338,873	52,030	41,082	7,490	133,239	6,042	239,883	70.80	98,990	78,904	69,496	43,905
2 mos.	342	557,420	52,895	641,137	108,897	82,442	14,102	269,077	12,579	487,097	76.00	154,040	113,931	91,727	57,838
Baltimore & Ohio.....Feb.	5,292	14,146,864	1,923,942	17,109,559	2,150,630	4,345,503	362,941	6,683,303	489,043	14,180,127	82.90	2,929,432	2,084,863	1,800,482	2,021,100
2 mos.	5,292	28,705,119	4,182,385	35,187,532	4,301,457	8,774,777	722,447	13,979,933	1,021,448	29,113,161	82.70	6,074,371	4,384,262	3,808,559	3,495,561
Baltimore & Ohio Chicago Term..Feb.	80	.....	.....	256,873	29,218	50,365	1,909	163,299	9,856	258,609	100.70	—1,736	—42,183	49,509	12,995
2 mos.	80	.....	.....	554,681	50,146	86,180	3,640	349,716	22,298	521,133	94.00	33,548	—47,201	125,780	17,008
Staten Island Rapid Transit.....Feb.	23	89,007	94,102	199,871	29,048	30,636	2,050	116,571	14,068	192,373	96.30	7,498	—9,155	—25,104	—23,057
2 mos.	23	173,417	194,889	399,110	76,689	60,628	3,678	245,749	28,730	415,474	104.10	—16,364	—48,096	—80,677	—50,162
Bangor & Aroostook.....Feb.	616	643,323	60,149	728,835	107,499	119,995	4,230	203,573	21,700	458,184	62.90	270,651	207,226	233,953	225,906
2 mos.	616	1,163,515	126,946	1,342,408	223,157	236,995	8,489	403,755	43,568	918,611	68.40	423,797	307,670	375,166	366,097
Belt Ry. Co. of Chicago.....Feb.	32	.....	.....	528,001	31,842	49,298	3,713	285,214	9,462	379,529	71.90	148,472	110,007	128,649	132,805
2 mos.	32	.....	.....	1,135,483	62,065	120,978	6,778	584,404	19,384	793,609	69.90	341,874	263,622	258,566	268,960
Bessemer & Lake Erie.....Feb.	228	781,969	18,303	820,681	52,425	343,630	15,994	267,878	31,367	705,749	86.00	114,932	84,931	156,183	—54,173
2 mos.	228	1,591,966	38,107	1,671,806	109,507	701,221	30,788	557,218	61,594	1,451,480	86.80	220,326	160,285	314,299	—110,998
Bingham & Garfield.....Feb.	33	48,683	119	49,861	7,898	8,082	1,484	12,341	5,263	35,362	70.90	14,499	3,630	17,307	14,639
2 mos.	32	96,925	119	99,154	15,180	20,108	3,684	26,609	9,596	75,674	76.30	23,480	2,508	28,935	25,036
Boston & Maine.....Feb.	2,271	3,926,683	1,633,698	6,207,732	821,225	1,308,831	54,383	2,665,378	231,143	5,101,933	82.20	1,105,799	846,554	628,514	555,971
2 mos.	2,271	7,707,143	3,341,472	12,492,224	1,714,545	2,656,354	113,391	5,545,240	482,462	10,555,691	84.50	1,936,533	1,412,114	977,869	647,999
Brooklyn Eastern District Term....Feb.	9	112,010	.....	118,529	4,784	19,584	65	40,935	4,997	70,365	59.40	48,164	41,210	42,410	45,488
2 mos.	9	212,327	.....	227,235	11,521	30,251	140	83,220	9,944	135,676	59.40	92,159	78,216	79,416	83,648
Buffalo & Susquehanna R. R. Corp..Feb.	253	160,927	5,441	169,186	30,631	65,741	1,830	53,402	9,912	161,516	95.50	7,670	9,070	39,076	42,164
2 mos.	253	347,926	10,943	364,828	62,845	135,245	3,722	112,042	19,871	333,725	91.50	31,103	22,303	85,512	88,613
Buffalo, Rochester & Pittsburgh....Feb.	590	1,035,818	122,387	1,221,811	111,334	355,086	25,209	490,327	38,215	1,022,582	83.70	199,229	164,229	184,954	107,941
2 mos.	590	2,113,930	258,499	2,498,196	241,142	729,194	51,490	1,012,222	79,821	2,118,798	84.80	379,398	309,386	372,110	252,882
Canadian Pacific, Lines in Maine...Feb.	233	228,616	33,876	278,630	23,551	53,972	4,720	119,028	4,029	205,300	73.70	73,330	62,330	50,640	43,509
2 mos.	233	458,173	62,061	553,225	48,975	97,343	9,682	236,546	8,058	400,604	72.40	152,621	130,521	107,143	120,004
Central of Georgia.....Feb.	1,920	1,618,454	499,964	2,345,513	371,543	425,334	64,356	846,961	91,303	1,802,136	76.80	543,377	441,338	400,278	429,597
2 mos.	1,920	3,024,847	1,009,235	4,324,366	767,852	865,197	131,335	1,737,099	182,442	3,676,820	81.30	847,546	656,763	619,674	726,894
Central of New Jersey.....Feb.	692	3,282,542	683,186	4,207,210	411,173	932,804	37,811	1,777,063	107,642	3,287,884	78.10	919,326	570,147	441,215	57,939
2 mos.	692	6,628,882	1,403,280	8,663,913	937,184	1,966,653	76,768	3,492,511	220,067	6,732,677	77.70	1,931,236	1,235,648	1,021,246	—151,669
Central Vermont .....Feb.	434	462,844	106,365	618,729	101,103	115,973	13,428	319,149	23,485	574,723	92.90	44,006	25,363	12,951	38,741
2 mos.	434	880,778	210,965	1,195,124	203,331	229,474	28,447	640,273	48,256	1,153,375	96.50	41,749	3,419	—20,105	83,944
Chesapeake & Ohio.....Feb.	2,598	7,512,652	706,885	8,557,518	1,355,239	2,192,614	107,126	2,660,448	214,497	6,559,564	76.70	1,998,014	1,560,362	1,706,975	1,809,185
2 mos.	2,598	15,533,950	1,515,544	17,790,069	2,698,745	4,582,798	213,497	5,642,656	432,593	13,630,355	76.60	4,159,714	3,280,261	3,552,844	3,299,506
Chicago & Alton.....Feb.	1,055	1,532,940	444,812	2,189,158	201,896	548,840	62,546	872,674	56,248	1,742,905	79.60	446,253	346,782	206,966	154,880
2 mos.	1,055	3,468,444	972,205	4,879,482	453,546	1,166,937	130,830	1,964,091	113,166	3,831,618	78.50	1,047,864	848,939	569,139	583,293
Chicago & Eastern Illinois.....Feb.	945	1,415,258	321,852	1,887,772	138,980	626,312	59,930	816,209	63,671	1,722,025	91.20	165,747	65,185	2,891	184,206
2 mos.	945	3,301,545	739,150	4,369,510	361,679	1,359,858	116,219	1,793,012	142,046	3,807,956	87.10	561,554	350,017	260,405	450,131

REVENUES AND EXPENSES OF RAILWAYS

Chicago & Alton	Feb.	1,055	1,532,940	444,812	2,189,158	201,896	548,840	62,546	872,674	56,248	1,742,905	79.60	446,253	346,782	206,966	154,880
	2 mos.	1,055	3,468,444	972,205	4,879,482	453,546	1,166,937	130,830	1,964,091	113,166	3,831,618	78.50	1,047,864	848,939	569,139	583,293
Chicago & Eastern Illinois	Feb.	945	1,415,258	321,852	1,887,772	138,980	626,312	59,920	816,209	63,671	1,722,025	91.20	165,747	65,185	2,891	184,206
	2 mos.	945	3,301,545	739,150	4,369,510	361,679	1,359,858	116,219	1,793,012	142,046	3,807,936	87.10	561,584	350,017	260,405	450,131

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1925—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures.	Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1924.
Chicago & North Western	Feb.	8,462	$7,185,487	$1,956,870	$10,266,392	$1,102,090	$2,647,644	$163,496	$4,568,532	$340,704	$8,873,915	86.40	$1,392,477	$591,033	$341,090	$1,298,354
	2 mos.	8,462	15,087,371	4,229,279	27,761,425	2,168,677	5,296,628	323,204	9,705,860	697,308	18,278,041	84.00	3,483,384	1,878,575	1,323,639	1,905,221
Chicago, Burlington & Quincy	Feb.	9,396	8,521,787	1,831,322	11,430,376	933,768	3,193,356	236,411	4,301,376	345,423	9,071,820	79.40	2,358,556	1,618,124	1,345,683	2,156,673
	2 mos.	9,396	18,695,301	3,917,747	24,830,412	2,100,346	6,572,272	467,733	9,612,150	720,675	19,607,901	79.00	5,222,511	3,603,282	3,165,247	3,498,263
Chicago Great Western	Feb.	1,496	1,402,971	284,795	1,836,749	167,930	396,569	66,865	762,096	52,597	1,457,681	79.40	379,068	290,649	154,231	201,846
	2 mos.	1,496	2,903,419	614,472	3,829,442	335,010	842,020	134,650	1,669,897	109,142	3,116,205	81.40	713,237	541,801	291,978	213,757
Chicago, Indianapolis & Louisville	Feb.	649	928,284	184,868	1,230,558	119,279	278,960	36,061	479,600	35,304	962,743	78.20	267,815	232,479	137,021	212,235
	2 mos.	649	1,996,725	420,598	2,668,587	247,560	610,308	69,910	1,020,620	71,091	2,049,001	76.90	619,586	510,087	297,607	296,390
Chicago, Milwaukee & St. Paul	Feb.	11,204	8,932,943	1,465,895	11,565,960	1,092,181	2,888,044	185,800	4,879,259	305,188	9,392,536	81.20	2,173,424	1,410,446	1,033,745	1,373,022
	2 mos.	11,204	18,856,405	3,171,748	24,519,533	2,234,238	5,952,178	388,562	10,527,964	641,537	19,828,758	80.90	4,690,775	3,175,310	2,409,815	2,000,535
Chicago, Peoria & St. Louis	Feb.	247	81,017	12,357	101,050	15,294	19,016	1,705	48,668	7,824	92,567	91.50	8,543	5,029	—23,591	—19,562
	2 mos.	247	179,477	22,361	219,298	30,019	44,500	3,798	109,208	16,715	204,240	93.10	15,058	8,010	—44,468	—42,616
Chicago River & Indiana	Feb.	19	.....	.....	544,001	58,615	69,660	699	217,065	12,735	358,774	66.40	185,227	134,033	242,749	282,454
	2 mos.	19	.....	.....	1,157,478	119,302	159,112	1,587	473,594	25,173	778,768	67.30	378,710	290,417	518,333	590,971
Chicago, Rock Island & Pacific	Feb.	7,578	6,815,709	1,761,914	9,290,284	944,351	2,164,491	212,756	3,783,234	293,194	7,363,461	79.30	1,926,823	1,407,497	981,571	1,407,314
	2 mos.	7,578	14,083,483	3,827,090	19,378,169	1,958,352	4,356,176	427,073	8,054,065	576,743	15,397,046	79.50	3,981,123	2,932,069	2,135,758	1,945,168
Chicago, Rock Island & Gulf	Feb.	461	376,926	79,108	496,283	60,979	64,820	15,905	192,126	16,188	353,632	71.30	142,651	129,799	113,022	123,090
	2 mos.	461	802,047	168,781	1,051,396	128,831	124,849	30,777	428,367	33,057	752,418	71.60	298,978	273,259	230,299	190,119
Chic., St. Paul, Minn. & Omaha	Feb.	1,749	1,558,971	435,493	2,144,577	171,535	374,416	26,983	951,709	71,908	1,604,549	74.80	540,028	411,537	335,107	308,415
	2 mos.	1,749	3,249,069	914,215	4,482,345	355,814	809,056	59,690	2,040,263	147,754	3,430,645	76.50	1,051,700	795,247	649,421	413,006
Cincinnati, Indianapolis & Western	Feb.	347	302,120	28,352	360,223	31,137	79,511	15,263	162,122	16,993	305,967	84.90	54,256	33,158	1,922	31,366
	2 mos.	347	647,684	60,847	771,480	66,381	169,383	31,644	336,774	34,293	634,102	82.20	137,378	95,832	43,727	61,520
Clinchfield Railroad	Feb.	309	653,201	31,181	697,096	59,930	182,424	24,854	150,332	19,505	436,605	62.60	260,491	205,491	297,213	213,589
	2 mos.	309	1,385,458	67,419	1,478,876	137,702	386,271	49,978	320,901	40,699	934,851	63.20	544,025	434,024	601,507	397,847
Colorado & Southern	Feb.	1,056	760,621	108,812	940,526	118,593	236,493	12,302	358,705	39,983	772,499	82.10	168,027	104,291	101,265	105,422
	2 mos.	1,056	1,666,445	237,207	2,053,701	210,667	477,145	24,197	795,124	81,664	1,602,111	78.00	451,590	324,179	290,623	249,292
Ft. Worth & Denver City	Feb.	455	718,186	146,710	914,979	65,325	179,179	12,705	278,629	34,081	575,525	62.90	339,454	280,274	293,454	229,267
	2 mos.	455	1,525,718	331,834	1,962,218	130,892	372,521	26,390	614,538	69,297	1,225,187	62.40	737,031	618,683	633,119	546,725
Wichita Valley	Feb.	271	114,486	17,936	141,029	31,135	8,090	.....	44,859	1,715	85,037	60.30	55,992	45,348	25,195	65,317
	2 mos.	271	253,459	43,909	315,874	59,617	15,357	193	97,317	3,301	174,564	55.30	141,310	120,750	78,640	122,879
Columbus & Greenville	Feb.	167	95,111	21,663	124,770	45,839	16,070	2,916	44,780	9,711	119,019	95.40	5,751	4,207	—6,550	22,646
	2 mos.	167	192,141	53,602	261,032	91,175	34,887	5,542	95,903	20,050	246,995	94.60	14,037	10,929	—11,895	20,259
Delaware & Hudson	Feb.	894	3,380,573	265,678	3,837,368	470,671	983,693	46,437	1,417,906	141,162	3,084,938	80.40	752,430	640,128	692,466	494,386
	2 mos.	894	6,320,737	568,005	7,346,105	985,224	1,970,465	92,783	2,834,195	281,660	6,214,838	84.60	1,131,267	906,160	987,492	529,253
Delaware, Lackawanna & Western	Feb.	992	4,933,279	1,010,383	6,675,993	534,417	1,581,688	116,982	2,758,443	159,570	5,198,807	77.90	1,477,186	931,877	981,676	950,315
	2 mos.	992	9,905,509	2,132,277	13,566,124	1,146,409	3,226,584	232,221	5,667,603	327,364	10,700,026	78.90	2,866,098	1,789,520	1,820,994	1,864,481
Denver & Rio Grande Western	Feb.	2,566	1,793,492	326,086	2,280,405	370,277	565,391	46,751	792,658	82,766	1,886,488	82.70	393,917	225,630	259,018	275,787
	2 mos.	2,566	3,912,814	670,298	4,929,542	775,879	1,188,459	96,030	1,789,156	172,680	4,081,141	82.80	848,401	511,701	568,800	483,377
Denver & Salt Lake	Feb.	255	252,826	22,689	295,992	36,515	95,526	1,121	87,255	6,016	226,433	76.50	69,559	60,559	61,213	13,735
	2 mos.	255	545,646	46,249	632,896	79,690	199,994	2,365	205,723	12,036	499,808	79.00	133,088	115,062	114,459	—31,286
Detroit & Mackinac	Feb.	375	79,745	22,317	113,106	15,224	33,197	2,073	50,872	5,899	107,216	94.80	5,890	—4,263	5,201	2,517
	2 mos.	375	169,238	52,004	243,952	32,547	71,629	4,079	109,750	12,361	230,307	94.40	13,645	—6,661	25,826	238
Detroit & Toledo Shore Line	Feb.	61	342,076	.....	350,282	18,822	30,435	2,848	90,873	6,967	149,945	42.80	200,337	178,841	102,764	75,885
	2 mos.	61	674,676	.....	689,718	39,579	59,350	5,796	199,049	18,167	321,941	46.60	367,777	318,082	150,465	70,655
Detroit Terminal	Feb.	26	.....	.....	168,705	19,922	12,217	1	84,292	1,881	111,313	66.00	57,392	33,563	45,435	69,125
	2 mos.	26	.....	.....	342,569	26,597	24,102	3	187,667	3,610	241,979	70.60	100,590	60,446	68,802	111,373
Detroit, Toledo & Ironton	Feb.	470	953,400	4,645	976,569	132,215	170,219	7,794	286,890	29,595	626,002	64.10	350,567	319,812	225,863	296,030
	2 mos.	470	2,029,630	13,740	2,082,794	231,654	327,258	14,318	609,810	52,318	1,227,463	58.90	855,331	763,310	560,456	572,135
Duluth & Iron Range	Feb.	276	97,801	8,173	117,981	48,132	113,810	1,033	103,829	18,232	285,470	242.00	—167,489	—175,234	—173,077	—173,597
	2 mos.	276	197,181	17,503	242,889	94,244	226,158	2,066	215,693	35,618	574,651	236.60	—331,762	—347,570	—351,987	—409,620
Duluth, Missabe & Northern	Feb.	305	76,020	7,880	98,353	90,783	186,069	2,857	129,876	20,635	430,880	438.10	—332,527	—398,467	—402,589	—488,482
	2 mos.	305	152,935	16,056	197,889	193,234	368,917	6,614	271,300	40,894	882,322	445.90	—684,433	—817,052	—824,354	—985,391
Duluth, Winnipeg & Pacific	Feb.	178	191,332	12,324	214,103	22,952	33,509	3,996	79,870	6,192	147,006	68.70	67,097	56,577	64,871	66,054
	2 mos.	178	385,334	24,564	424,895	45,521	73,548	8,409	171,741	14,263	314,543	74.00	110,352	89,292	106,535	104,345
Elgin, Joliet & Eastern	Feb.	459	2,016,971	.....	2,215,657	128,389	463,304	14,271	779,139	40,382	1,425,439	64.30	790,218	702,524	471,393	374,512
	2 mos.	459	4,061,166	48	4,468,396	265,358	880,315	27,095	1,634,829	83,682	2,891,064	64.70	1,577,332	1,402,104	934,924	589,137
Erie R. R.	Feb.	2,055	6,400,850	966,050	7,971,664	869,815	2,360,556	149,543	3,373,849	285,008	7,072,484	88.70	899,180	530,943	593,966	1,285,629
	2 mos.	2,055	12,233,685	2,040,768	15,518,623	1,783,385	4,607,064	306,621	6,882,660	577,406	14,238,346	91.80	1,280,277	580,740	762,853	2,139,275
Chicago & Erie	Feb.	269	965,711	45,714	1,085,359	97,981	159,080	23,128	380,010	37,969	698,161	64.30	387,198	320,449	42,054	193,401
	2 mos.	269	1,914,818	105,697	2,166,098	198,835	310,877	47,849	794,536	77,198	1,429,320	66.00	736,778	632,906	75,736	169,098

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1925—CONTINUED

Name of road	Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures.	Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1924.
New Jersey & New York.....Feb.	45	$21,666	$98,131	$123,836	$15,084	$24,442	$1,293	$67,380	$3,581	$111,780	90.20	$12,056	$8,345	—$21,028	—$11,487
2 mos.	45	44,360	198,157	250,597	36,581	49,338	2,515	142,109	8,795	239,338	95.50	11,259	4,223	—56,736	—31,358
N. Y., Susquehanna & Western...Feb.	135	325,474	86,535	422,580	37,268	73,547	4,133	214,116	10,696	336,754	80.40	82,826	53,926	36,852	—32,083
2 mos.	135	606,801	115,191	804,487	91,104	139,874	7,978	438,331	21,611	698,800	86.90	105,687	50,218	15,989	—74,267
Evansville, Indianap's & Terre Haute..Feb.	146	179,616	4,367	190,499	20,993	27,674	1,372	58,805	3,960	112,762	59.20	77,737	68,649	51,764	41,942
2 mos.	146	382,989	8,904	405,145	44,761	59,903	3,416	134,841	7,515	250,228	61.80	154,917	137,050	101,555	58,504
Florida East Coast .....Feb.	770	1,234,735	1,143,543	2,678,871	336,746	271,940	25,970	900,723	36,635	1,636,254	61.10	1,042,617	920,020	741,779	869,573
2 mos.	770	2,473,973	1,998,801	5,019,278	649,541	569,517	54,679	1,786,143	76,043	3,205,893	63.90	1,813,385	1,580,370	1,244,976	1,277,302
Fort Smith & Western.....Feb.	249	120,923	16,173	145,140	22,497	23,892	5,385	44,308	7,270	103,978	71.60	41,162	35,636	22,128	—13,199
2 mos.	249	253,601	37,606	310,097	45,052	50,043	10,734	98,996	15,193	221,344	71.40	88,753	77,551	50,333	—30,209
Galveston Wharf Co.....Feb.	13	.....	.....	152,529	46,594	3,933	773	44,441	2,681	106,479	69.80	46,050	29,030	28,840	1,141
2 mos.	13	.....	.....	363,822	93,289	7,334	1,710	98,762	5,392	224,158	81.60	139,664	105,621	105,277	23,725
Georgia R. R.....Feb.	328	354,381	75,311	461,303	65,345	102,437	22,289	198,397	20,836	408,937	88.60	52,366	39,625	31,362	101,074
2 mos.	328	706,072	171,303	956,331	117,596	206,124	45,188	433,074	41,920	843,682	88.20	112,649	87,296	75,924	171,953
Georgia & Florida.....Feb.	406	115,065	12,041	134,242	17,522	15,930	7,535	56,013	7,318	104,540	77.80	29,702	23,139	14,631	15,838
2 mos.	406	197,646	25,452	237,974	36,683	32,489	15,497	102,474	14,482	202,065	77.40	35,909	22,721	—952	26,529
Grand Trunk Western.....Feb.	347	1,098,760	144,528	1,323,629	103,011	384,015	31,984	525,665	53,304	1,105,990	83.60	217,639	143,416	—21,953	88,296
2 mos.	347	2,094,852	310,931	2,564,095	191,685	765,465	68,256	1,106,700	106,007	2,254,428	87.90	309,667	161,178	—159,847	36,774
Atlantic & Saint Lawrence.....Feb.	166	154,498	24,517	193,906	34,572	33,348	4,954	130,966	8,239	213,815	110.20	—19,909	—34,540	—112,633	—126,836
2 mos.	166	363,552	56,030	449,119	64,498	72,627	10,637	259,562	16,256	427,089	95.10	22,030	—7,232	—152,034	—248,611
Chic., Det. & Canada Gr. Tr. Jct..Feb.	59	249,487	5,833	295,830	13,770	12,438	3,658	78,666	3,693	112,218	37.90	183,612	169,612	139,067	80,265
2 mos.	59	473,682	9,737	562,095	26,096	24,994	7,508	164,225	6,974	229,767	40.90	332,328	304,317	244,223	188,680
Det., Grand Haven & Milwaukee..Feb.	189	321,093	23,179	392,454	33,088	46,869	9,749	229,216	16,743	335,698	85.50	56,756	51,239	—44,833	37,412
2 mos.	189	721,731	65,370	876,403	67,070	97,288	20,381	486,649	32,722	704,096	80.30	172,307	161,768	—30,537	91,591
Great Northern .....Feb.	8,250	5,135,057	939,065	6,749,712	719,788	1,381,317	151,520	2,801,820	212,268	5,347,401	79.20	1,402,311	681,728	748,388	668,330
2 mos.	8,250	10,470,839	2,071,557	13,906,824	1,479,921	2,622,009	305,450	5,979,592	449,699	11,004,437	79.10	2,902,387	1,449,458	1,556,404	1,220,368
Green Bay & Western .....Feb.	234	92,614	10,471	110,822	17,744	15,957	3,340	44,171	2,735	83,947	75.70	26,875	19,375	11,465	19,388
2 mos.	234	203,452	23,201	242,626	37,126	35,068	7,029	93,142	5,239	177,604	73.20	65,022	50,022	36,422	33,965
Gulf & Ship Island.....Feb.	307	236,356	36,732	303,821	37,853	40,568	7,597	90,138	14,216	202,250	66.60	101,571	72,365	56,374	71,398
2 mos.	307	480,406	77,074	617,537	78,999	84,588	15,509	170,579	33,430	406,167	65.70	211,370	152,999	125,981	120,508
Gulf, Mobile & Northern.....Feb.	465	437,107	33,639	490,415	72,605	84,587	23,043	149,826	25,563	356,090	72.61	134,325	105,680	92,552	92,468
2 mos.	465	884,877	75,224	1,002,049	156,789	180,964	42,817	308,764	55,552	745,591	74.41	256,458	199,490	172,728	176,543
Hocking Valley .....Feb.	348	1,013,569	62,392	1,137,827	118,442	397,157	13,761	376,781	36,364	942,489	82.80	195,338	95,100	174,803	376,542
2 mos.	348	2,203,485	134,280	2,469,659	241,595	843,420	27,765	820,289	74,040	2,007,031	81.30	462,628	261,859	458,706	622,340
Illinois Central .....Feb.	4,875	8,730,581	2,041,979	11,661,542	1,378,466	2,411,318	257,389	4,338,629	314,454	8,738,168	74.90	2,923,374	1,969,075	2,063,739	2,671,327
2 mos.	4,875	18,560,650	4,372,461	24,705,702	2,961,350	5,180,751	480,673	9,401,143	635,931	18,773,380	76.00	5,932,322	4,000,856	4,147,135	4,892,385
Yazoo & Mississippi Valley.....Feb.	1,380	1,492,104	263,084	1,860,054	277,309	290,333	29,830	648,030	45,767	1,288,756	69.30	571,298	443,206	414,609	372,279
2 mos.	1,380	3,018,320	576,876	3,794,632	563,951	590,055	57,111	1,364,942	93,218	2,660,201	70.10	1,134,431	878,406	825,112	690,584
Illinois Central Combined Report....Feb.	6,255	10,222,685	2,305,063	13,521,596	1,655,775	2,701,651	287,219	4,986,659	360,221	10,026,924	74.20	3,494,672	2,412,281	2,478,348	3,043,606
2 mos.	6,255	21,578,970	4,949,337	28,500,334	3,525,301	5,770,806	537,784	10,766,085	729,149	21,433,581	75.20	7,066,753	4,879,262	4,972,247	5,582,969
Kansas City, Mexico & Orient.....Feb.	272	199,097	7,232	214,326	36,079	48,185	5,360	73,775	5,409	169,708	79.20	44,618	34,618	11,699	—17,763
2 mos.	272	450,222	15,157	480,297	71,735	94,472	11,739	166,691	10,818	355,455	74.00	124,842	104,842	45,958	—47,805
Kan. City, Mex. & Orient of Tex..Feb.	465	288,952	10,663	309,880	33,656	49,425	5,800	74,886	5,325	169,075	54.60	140,805	133,805	114,519	—1,978
2 mos.	465	531,641	26,374	577,748	83,179	97,983	12,499	170,257	10,915	374,814	64.90	202,934	188,934	143,694	7,752
Kansas City Southern.....Feb.	773	1,026,678	115,146	1,266,558	152,824	258,503	42,954	450,579	72,377	977,311	77.20	289,247	194,828	173,277	288,397
2 mos.	773	2,227,110	248,501	2,727,909	321,808	522,395	86,856	949,133	151,064	2,031,111	74.50	696,798	508,848	471,388	574,603
Texarkana & Ft. Smith.....Feb.	81	195,467	10,462	219,431	22,777	12,582	4,925	64,006	9,231	115,163	52.40	104,268	88,466	61,079	84,101
2 mos.	81	414,108	21,634	466,636	57,373	40,645	9,671	132,236	18,033	261,610	56.10	205,026	173,409	108,584	152,062
Kansas, Oklahoma & Gulf.....Feb.	314	148,714	6,757	160,957	54,867	29,096	8,349	67,938	9,481	169,647	105.40	—8,690	—17,366	—26,562	17,826
2 mos.	314	310,738	16,912	338,573	105,399	60,121	16,711	140,097	19,669	341,958	101.00	—3,385	—22,288	—41,994	12,777
Lake Superior & Ishpeming.....Feb.	161	65,758	5,394	14,081	26,340	24,284	407	36,867	4,615	92,513	124.90	—18,432	—29,788	—33,648	—32,067
2 mos.	161	130,667	11,431	149,692	48,748	55,253	1,045	73,661	9,635	188,342	125.80	—38,650	—61,354	—69,728	—79,495
Lake Terminal .....Feb.	13	.....	.....	86,141	9,807	18,170	.....	50,585	1,667	80,229	93.10	5,912	—322	1,978	—9,638
2 mos.	13	.....	.....	178,988	22,443	35,462	.....	105,091	3,442	166,438	93.00	12,550	82	4,157	—38,448
Lehigh & Hudson River.....Feb.	96	234,036	2,933	253,847	27,609	46,766	2,185	100,036	8,587	179,183	70.60	74,664	61,255	34,926	45,337
2 mos.	96	458,595	6,160	494,268	51,643	88,531	3,797	208,221	18,435	370,627	75.00	123,641	99,779	50,883	58,078
Lehigh & New England.....Feb.	219	378,587	1,894	386,770	43,075	112,494	5,215	131,328	18,890	311,002	80.40	75,768	61,966	75,609	56,458
2 mos.	219	737,320	4,148	755,011	90,496	229,391	11,353	269,287	38,001	638,301	84.50	116,710	94,428	115,535	136,228
Lehigh Valley .....Feb.	1,374	4,874,646	555,425	5,819,772	637,858	1,250,482	115,299	2,489,545	140,644	4,658,870	80.10	1,160,902	874,465	737,832	692,421
2 mos.	1,374	9,514,959	1,156,306	11,572,549	1,406,465	2,559,959	224,447	5,111,484	272,720	9,625,782	83.20	1,946,767	1,403,758	1,106,999	957,931

REVENUES AND EXPENSES OF RAILWAYS

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1925—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1924.
Louisiana & Arkansas	Feb.	392	$289,521	$23,641	$320,219	$53,232	$58,877	$10,958	$89,949	$11,922	$224,334	70.10	$95,885	$68,412	$51,678	$46,061
	2 mos.	302	571,400	52,336	639,028	115,442	123,787	21,291	189,356	23,872	472,709	74.00	166,319	111,359	89,349	101,918
Louisiana Ry. & Nav. Co.	Feb.	337	243,714	16,071	279,136	69,120	40,012	10,208	128,158	10,389	256,490	91.80	22,646	2,474	—25,538	—13,380
	2 mos.	337	500,460	34,925	582,595	144,320	92,615	21,450	275,010	20,592	551,941	94.70	30,654	—9,915	—74,870	—36,355
Louisiana Ry. & Nav. Co. of Tex.	Feb.	206	88,044	6,783	102,363	25,553	18,667	4,277	48,559	5,974	103,030	100.70	—667	—4,667	—16,682	27,087
	2 mos.	206	192,455	16,632	223,655	43,585	33,612	6,618	98,063	11,355	193,233	86.40	30,422	22,422	—11,062	—39,096
Louisville & Nashville	Feb.	5,044	8,844,694	1,725,136	11,218,042	1,543,110	2,622,570	243,436	4,044,172	248,923	8,745,843	78.00	2,472,199	1,946,424	1,914,892	1,896,503
	2 mos.	5,044	18,008,753	3,704,588	22,987,369	3,132,098	5,454,271	500,431	8,411,450	511,101	18,088,322	78.70	4,899,047	3,854,201	3,815,817	2,717,245
Louisville, Henderson & St. Louis	Feb.	199	257,030	49,477	322,953	41,641	45,706	7,126	101,646	9,067	205,186	63.50	117,767	97,484	82,095	66,019
	2 mos.	199	532,455	104,730	672,143	89,406	95,507	14,471	212,498	18,776	430,658	64.10	241,485	200,563	166,093	133,794
Maine Central	Feb.	1,207	1,217,287	306,864	1,651,414	246,149	317,328	11,650	686,896	46,002	1,308,025	79.20	343,389	242,965	230,743	231,634
	2 mos.	1,207	2,372,065	626,374	3,276,607	491,733	643,373	24,372	1,405,059	100,034	2,664,207	81.30	612,400	411,554	374,083	282,713
Midland Valley	Feb.	364	288,674	38,178	341,575	38,807	44,102	6,209	107,091	18,502	214,245	62.70	127,330	110,547	96,316	83,529
	2 mos.	364	593,170	86,913	710,563	70,284	86,739	12,092	217,843	36,939	422,977	59.50	287,586	254,032	218,875	206,522
Minneapolis & St. Louis	Feb.	1,638	1,051,165	116,918	1,234,025	113,463	250,129	30,822	572,652	44,522	1,011,434	82.00	222,591	154,192	87,800	212,773
	2 mos.	1,638	2,236,565	244,496	2,616,321	277,355	518,476	60,488	1,242,071	101,369	2,148,273	82.10	468,048	334,230	214,849	128,604
Minneapolis, St. Paul & S. S. Marie	Feb.	4,403	2,639,698	450,934	3,333,128	414,867	681,624	57,751	1,406,454	103,809	2,676,772	80.30	656,356	432,611	300,448	164,178
	2 mos.	4,403	5,331,902	1,008,186	6,831,772	852,524	1,425,957	129,738	3,043,721	217,006	5,691,291	83.30	1,140,571	665,599	392,444	171,837
Duluth, South Shore & Atlantic	Feb.	591	318,475	79,317	424,015	53,551	88,081	6,428	180,346	10,949	344,074	81.10	79,941	49,941	33,473	18,566
	2 mos.	591	652,250	183,245	895,387	95,824	194,170	13,617	394,385	22,722	730,728	81.60	164,659	104,659	63,905	39,677
Spokane International	Feb.	165	67,955	11,203	85,114	12,060	6,008	3,149	29,940	7,239	59,439	69.80	25,675	20,466	12,485	13,990
	2 mos.	165	137,565	23,537	172,136	20,566	12,727	6,335	65,123	13,797	120,882	70.20	51,254	40,833	27,272	27,997
Mississippi Central	Feb.	164	95,101	11,018	110,983	14,285	23,133	6,875	35,556	8,979	88,828	80.00	22,155	4,532	4,308	41,874
	2 mos.	206	219,480	25,111	255,804	36,480	45,101	13,929	81,824	18,096	195,430	76.40	60,374	46,237	48,850	79,417
Missouri & North Arkansas	Feb.	364	101,928	14,638	125,091	26,053	19,423	4,865	50,411	7,421	108,173	86.50	16,918	14,526	6,073	—5,090
	2 mos.	364	200,841	32,130	249,843	53,492	39,410	9,648	105,530	14,606	222,686	89.10	27,157	22,069	4,661	—14,797
Missouri-Kansas-Texas	Feb.	1,799	2,020,515	380,261	2,602,422	272,911	569,016	50,981	716,346	83,656	1,703,055	65.40	899,367	696,191	716,896	711,540
	2 mos.	1,799	4,277,203	826,880	5,529,480	544,220	1,169,151	103,530	1,572,167	175,668	3,589,295	64.90	1,940,185	1,525,763	1,586,601	1,269,431
Mo., Kansas, Texas of Texas	Feb.	1,389	1,344,644	329,369	1,817,652	248,619	278,153	41,051	680,235	64,244	1,322,093	72.70	495,559	442,895	250'602	176,379
	2 mos.	1,389	2,747,113	722,479	3,791,916	480,137	628,870	83,150	1,517,444	132,171	2,861,914	75.50	930,002	824,536	387,114	306,639
Missouri Pacific	Feb.	7,336	8,047,005	1,283,550	10,097,263	1,360,319	2,080,582	225,519	4,005,595	310,522	8,043,339	79.70	2,053,924	1,630,240	1,098,323	1,024,515
	2 mos.	7,336	16,727,300	2,722,868	21,065,403	2,641,394	4,326,712	487,690	8,559,301	633,297	16,776,102	79.60	4,289,301	3,445,446	2,370,527	1,955,533
International Great Northern	Feb.	1,159	1,089,898	164,986	1,385,336	264,844	240,605	36,861	523,403	48,572	1,100,251	79.42	285,085	248,335	155,373	94,575
	2 mos.	1,159	2,159,192	351,920	2,815,195	517,165	491,935	73,355	1,089,798	100,223	2,233,739	79.35	581,456	507,921	289,149	190,592
Texas & Pacific	Feb.	1,952	1,977,655	468,512	2,640,887	354,798	500,223	60,522	935,446	86,445	1,927,458	73.00	713,429	573,727	501,470	500,858
	2 mos.	1,952	4,004,476	1,037,378	5,441,405	757,216	1,062,557	123,840	2,041,646	178,828	4,167,307	76.60	1,274,098	993,232	784,422	894,904
Mobile & Ohio	Feb.	1,161	1,267,772	130,270	1,480,036	217,549	254,286	49,905	530,432	42,521	1,094,316	73.90	385,720	299,913	224,758	348,514
	2 mos.	1,161	2,564,824	283,691	3,021,251	430,300	561,387	95,435	1,096,758	88,265	2,272,048	75.20	749,203	575,640	443,115	588,748
Monongahela	Feb.	129	415,986	25,705	444,583	62,500	65,000	1,577	123,222	9,924	262,223	59.00	182,360	166,360	105,306	97,591
	2 mos.	129	888,420	53,315	948,686	125,000	130,000	2,737	268,279	20,928	545,918	57.50	402,768	370,547	237,709	190,175
Monongahela Connecting	Feb.	7	.....	.....	201,508	21,256	43,729	375	108,853	3,492	177,705	88.20	23,803	19,009	20,381	—4,742
	2 mos.	7	.....	.....	427,760	44,505	89,295	750	232,840	7,568	374,958	87.70	52,802	43,018	41,229	5,235
Montour	Feb.	57	99,782	959	101,466	17,112	46,987	991	28,947	7,415	101,452	100.00	14	—4,910	28,966	37,610
	2 mos.	57	224,209	1,830	227,795	37,530	92,429	1,951	65,377	14,613	211,900	93.00	15,895	3,915	70,007	74,751
Nashville, Chattanooga & St. Louis	Feb.	1,259	1,396,719	397,436	1,932,835	249,702	423,278	73,526	687,157	66,941	1,512,321	78.20	420,514	360,200	359,347	287,865
	2 mos.	1,259	2,717,632	829,900	3,862,592	502,451	879,159	156,021	1,425,649	139,775	3,136,015	81.20	726,577	605,262	582,616	396,036
Nevada Northern	Feb.	165	66,282	7,777	79,447	16,475	7,896	1,009	17,327	4,450	47,157	39.40	32,290	21,813	21,713	35,637
	2 mos.	165	133,328	16,487	161,635	34,307	17,699	1,841	36,001	9,351	99,199	61.30	62,436	41,483	41,144	65,418
Newburgh & South Shore	Feb.	7	.....	.....	180,401	11,173	37,385	.....	69,569	4,102	122,229	67.80	58,172	44,787	51,583	15,456
	2 mos.	7	.....	.....	355,017	24,202	72,580	.....	152,841	11,196	260,819	73.50	94,198	68,005	76,192	18,752
New Orleans Great Northern	Feb.	274	205,273	22,718	236,209	31,750	39,557	6,387	73,730	9,991	161,432	68.30	74,777	54,707	43,260	48,266
	2 mos.	274	413,867	47,752	479,913	65,202	79,719	12,091	149,631	20,685	327,350	68.20	152,563	112,443	89,075	91,004
New York Central	Feb.	6,920	18,364,654	6,571,244	28,168,881	3,318,005	5,934,156	359,271	11,403,535	873,585	22,213,500	78.90	5,955,381	4,022,137	3,861,630	4,450,385
	2 mos.	6,920	36,547,293	14,506,194	57,792,535	6,880,933	12,733,180	730,629	23,303,030	1,758,129	46,166,964	79.90	11,625,571	7,802,369	7,577,998	8,456,384
Cincinnati Northern	Feb.	244	331,445	7,608	344,137	40,424	67,005	6,997	116,539	9,446	240,411	69.90	103,726	82,794	53,860	110,782
	2 mos.	244	722,854	17,936	751,665	82,685	139,457	13,365	250,776	18,836	505,108	67.20	246,557	199,792	137,383	149,633
Cleve., Cin., Chic. & St. Louis	Feb.	2,398	5,226,899	1,103,861	6,838,383	699,388	1,379,614	108,986	2,606,932	193,239	5,037,703	73.70	1,800,680	1,370,360	1,262,150	1,131,766
	2 mos.	2,398	11,061,131	2,495,840	14,675,716	1,393,196	3,014,446	234,812	5,616,940	396,469	10,764,267	73.30	3,911,449	3,018,722	2,791,278	1,798,858
Indiana Harbor Belt	Feb.	116	.....	.....	828,988	86,353	103,097	5,535	392,841	21,886	609,568	73.50	219,420	191,095	72,929	115,208
	2 mos.	116	.....	.....	1,781,559	150,236	240,011	11,690	859,614	43,929	1,305,327	73.30	476,232	416,703	173,840	121,853
Michigan Central	Feb.	1,862	4,652,294	1,301,754	6,633,822	696,837	1,435,308	101,098	2,335,697	153,464	4,791,045	72.20	1,842,777	1,463,798	1,446,190	1,685,696
	2 mos.	1,862	9,265,976	3,050,301	13,619,727	1,396,679	2,766,350	204,363	4,982,700	312,558	9,817,180	72.10	3,802,547	2,982,985	3,000,915	3,046,307
Pittsburgh & Lake Erie	Feb.	231	2,505,374	226,453	2,817,740	322,810	856,175	21,617	906,638	73,710	2,181,081	77.40	636,659	455,291	856,545	868,890
	2 mos.	231	5,106,284	477,508	5,772,305	699,211	1,710,479	48,735	1,891,799	146,933	4,497,270	77.90	1,275,035	905,866	1,737,273	1,630,936

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1925—CONTINUED

Name of road	Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1924.
New York, Chicago & St. Louis	Feb. 1,695	$3,876,491	$120,008	$4,122,258	$484,807	$807,475	$119,002	$1,557,677	$159,786	$3,133,428	76.00	$988,830	$741,489	$639,345	$779,835
	2 mos. 1,695	8,195,221	258,426	8,732,793	1,003,175	1,702,392	241,683	3,291,268	331,600	6,580,585	75.40	2,152,208	1,655,091	1,498,097	1,178,323
N. Y. New Haven & Hartford	Feb. 1,957	5,042,169	3,751,573	9,814,737	895,682	2,140,101	61,202	3,735,212	285,850	7,280,120	74.20	2,534,617	2,116,550	1,612,125	1,246,701
	2 mos. 1,957	9,944,107	7,866,690	19,947,192	1,927,065	4,409,822	128,615	7,812,454	590,161	15,199,025	76.20	4,748,167	3,911,383	3,024,203	2,336,808
Central New England	Feb. 292	648,498	10,316	677,872	64,184	90,874	4,813	201,790	14,115	375,776	55.40	302,096	276,596	231,851	128,280
	2 mos. 292	1,211,338	21,872	1,273,816	150,286	212,454	10,500	434,279	29,091	836,593	65.70	437,223	386,211	303,368	248,563
New York Connecting	Feb. 20	207,535	.....	194,262	8,010	11,155	.....	47,307	1,722	68,194	35.10	126,068	86,568	109,960	118,719
	2 mos. 20	414,532	.....	460,927	15,469	12,671	.....	110,921	2,863	141,924	30.80	319,003	240,003	225,267	202,848
New York, Ontario & Western	Feb. 569	688,220	82,997	916,054	124,015	206,583	15,699	466,029	35,056	850,356	92.80	65,698	19,616	—11,231	2,980
	2 mos. 569	1,340,652	179,307	1,822,746	249,968	429,621	32,434	963,657	74,230	1,761,009	96.60	61,737	—30,375	—97,852	—98,753
Norfolk & Western	Feb. 2,240	6,913,898	612,352	7,795,152	1,081,941	1,565,895	92,327	2,283,308	164,147	5,196,178	66.70	2,598,974	1,998,740	2,240,804	1,007,506
	2 mos. 2,240	14,140,191	1,319,120	16,062,258	1,982,962	3,566,658	187,781	4,805,247	344,567	10,905,991	67.90	5,156,267	3,955,628	4,434,970	1,953,569
Norfolk Southern	Feb. 931	577,233	74,019	689,441	92,623	81,873	22,466	283,623	27,910	508,985	73.80	180,456	133,287	101,230	113,208
	2 mos. 931	1,069,301	171,830	1,322,684	183,434	164,673	45,540	577,012	55,860	1,027,598	77.70	295,086	202,752	149,318	186,584
Northern Pacific	Feb. 6,694	4,949,215	874,082	6,384,583	710,342	1,403,772	158,569	2,637,848	237,810	5,240,594	82.10	1,143,989	485,929	860,271	1,466,771
	2 mos. 6,694	10,296,100	1,897,200	13,391,544	1,451,424	2,912,201	321,032	5,689,049	499,174	11,057,447	82.60	2,334,097	1,001,669	1,620,357	1,976,191
Northwestern Pacific	Feb. 480	243,686	129,004	412,491	93,134	76,860	4,674	202,794	17,220	394,650	95.70	17,841	—28,263	—39,939	3,304
	2 mos. 480	528,190	275,217	891,926	176,432	155,278	9,196	422,135	34,824	797,601	89.40	94,325	1,210	—18,928	—58,117
Pennsylvania R. R.	Feb. 10,499	35,090,565	10,615,705	49,807,674	6,179,933	13,311,227	643,453	19,848,342	1,495,459	42,213,394	84.80	7,594,280	6,160,661	4,989,170	6,332,279
	2 mos. 10,499	71,033,389	23,021,726	103,125,949	12,820,347	27,449,255	1,276,957	41,293,723	2,995,283	87,394,659	84.70	15,731,290	12,346,119	9,905,574	11,629,915
Baltimore, Chasapeake & Atlantic	Feb. 130	64,479	17,053	86,706	9,712	33,756	1,314	69,046	3,193	117,021	135.00	—30,315	—30,342	—31,715	—20,244
	2 mos. 130	110,492	40,206	161,940	18,480	61,789	2,807	145,935	6,441	235,452	145.40	—73,512	—73,551	—77,683	—40,696
Long Island	Feb. 397	754,514	1,451,495	2,389,463	314,368	441,184	17,796	1,205,748	69,693	2,058,935	86.20	330,528	307,319	274,184	211,780
	2 mos. 397	1,439,267	2,994,244	4,817,510	708,460	936,912	39,594	2,485,204	135,778	4,326,594	89.80	490,926	419,902	345,325	313,439
West Jersey & Seashore	Feb. 360	333,749	445,891	825,850	151,697	164,684	12,038	424,654	23,005	776,978	94.10	48,872	48,813	22,394	—19,712
	2 mos. 360	675,378	858,706	1,634,075	324,535	335,629	23,615	887,059	47,414	1,619,377	99.10	14,698	14,582	—38,805	—84,410
Peoria & Pekin Union	Feb. 19	28,165	3,832	163,934	9,904	27,329	901	76,831	8,265	123,230	75.20	40,704	24,704	44,272	68,367
	2 mos. 19	60,406	7,875	364,724	23,137	49,006	1,455	172,675	16,428	262,701	72.00	102,023	70,023	104,615	123,389
Pere Marquette	Feb. 2,263	2,467,218	298,677	2,964,851	248,742	708,183	47,309	1,164,400	96,995	2,273,640	76.70	691,211	527,393	559,598	621,317
	2 mos. 2,264	5,055,570	690,367	6,172,977	492,512	1,436,168	104,351	2,497,408	202,768	4,749,813	76.90	1,423,164	1,132,994	1,109,306	848,092
Pittsburgh & Shawmut	Feb. 102	90,170	6,555	99,388	13,341	32,952	1,491	30,314	6,519	84,617	85.10	14,771	14,589	23,240	9,258
	2 mos. 102	189,918	12,606	206,749	26,906	68,552	2,762	66,339	13,407	177,966	86.10	28,783	28,445	46,350	21,248
Pittsburgh & West Virginia	Feb. 92	316,597	7,660	359,878	27,075	87,722	5,658	72,861	27,522	230,727	64.10	129,151	92,273	149,820	128,649
	2 mos. 92	657,058	151,135	740,897	55,874	184,706	11,602	153,505	45,282	472,242	63.70	268,655	187,483	314,290	235,824
Pittsburgh, Shawmut & Northern	Feb. 210	132,381	4,983	139,930	18,550	33,342	1,605	50,901	5,737	110,135	78.70	29,795	27,139	24,541	—8,998
	2 mos. 210	276,643	9,665	291,930	37,789	66,062	3,349	113,974	11,007	232,181	79.50	59,749	54,441	50,862	—40,951
Quincy, Omaha & Kansas City	Feb. 250	34,385	18,694	60,634	9,332	17,163	908	35,190	2,933	65,469	108.00	—4,835	—9,468	—12,681	—41,021
	2 mos. 250	80,915	36,873	133,628	28,877	34,293	1,823	78,476	5,427	148,302	111.00	—14,674	—23,939	—30,074	—43,367
Reading Company	Feb. 1,139	6,385,188	827,488	7,521,176	767,143	1,698,872	67,526	2,844,023	162,311	5,495,012	73.10	2,026,164	1,652,567	1,732,062	1,601,695
	2 mos. 1,139	12,717,793	1,781,485	15,180,791	1,540,599	3,437,019	129,442	5,950,994	336,251	11,360,327	74.80	3,820,464	3,073,225	3,217,144	2,712,521
Atlantic City	Feb. 169	118,679	117,087	247,111	95,629	30,801	4,821	172,058	2,598	306,121	123.90	—59,010	—81,706	—100,978	—148,500
	2 mos. 169	233,196	234,998	493,815	219,212	97,572	8,381	354,470	7,172	687,104	139.10	—193,289	—238,681	—288,147	—288,720
Perkiomen	Feb. 41	82,268	6,346	92,161	8,111	4,936	106	43,119	827	57,148	62.00	35,013	29,845	25,056	22,201
	2 mos. 41	187,711	13,646	208,767	16,508	10,406	213	90,555	1,633	119,411	57.20	89,356	79,021	69,139	60,424
Port Reading	Feb. 19	164,009	.....	203,077	12,365	5,870	229	74,037	1,441	93,942	46.30	109,135	93,773	34,257	4,756
	2 mos. 19	342,508	.....	432,660	26,398	11,719	458	160,319	2,845	201,739	46.60	230,921	200,197	75,360	—3,852
Richmond, Fred'ksburg & Potomac	Feb. 117	458,526	391,403	1,015,024	79,480	155,503	9,692	335,993	33,609	647,881	63.80	367,143	307,951	243,608	231,317
	2 mos. 117	868,200	821,878	2,042,146	155,622	319,422	18,041	675,697	68,866	1,297,568	63.50	744,578	623,802	503,496	461,733
Rutland	Feb. 413	288,821	99,251	472,925	85,966	109,357	8,776	235,305	14,369	454,217	96.00	18,708	—3,537	14,446	40,564
	2 mos. 413	564,134	205,650	957,863	177,602	227,937	17,798	476,054	28,926	930,511	97.10	27,352	—16,568	22,104	74,675
St. Louis-San Francisco	Feb. 4,902	4,962,394	1,237,448	6,593,928	673,402	1,312,337	98,467	2,349,123	218,457	4,641,297	70.40	1,952,631	1,590,552	1,561,411	1,459,677
	2 mos. 4,902	10,285,812	2,725,653	13,874,102	1,448,111	2,633,162	199,059	4,991,090	446,063	9,695,773	69.90	4,178,326	3,414,352	3,318,230	3,015,241
Ft. Worth & Rio Grande	Feb. 233	81,252	15,640	106,841	16,459	21,517	2,896	52,277	4,423	97,563	91.30	9,278	5,242	—6,246	—7,400
	2 mos. 233	187,417	36,456	245,521	36,890	47,861	6,011	112,351	9,231	212,298	86.50	33,223	25,165	1,944	11,356
St. Louis, San Francisco & Tex	Feb. 137	147,502	11,673	165,481	23,158	25,008	5,020	58,938	6,973	119,096	72.00	46,385	44,047	26,838	7,653
	2 mos. 137	360,152	28,186	400,614	46,840	54,475	10,152	128,107	14,625	254,197	63.50	146,417	141,424	95,841	24,131
St. Louis Southwestern	Feb. 940	1,277,834	117,682	1,473,327	228,916	317,851	49,859	352,413	58,260	1,022,738	69.40	450,589	396,152	306,923	339,217
	2 mos. 940	2,651,374	261,317	3,075,722	442,575	652,084	102,252	762,648	124,090	2,115,371	68.80	960,351	829,488	647,454	746,715
St. Louis Southwestern of Texas	Feb. 807	519,706	61,023	624,523	140,172	180,559	21,208	259,484	29,767	633,909	101.50	—9,386	—36,394	460	86,441
	2 mos. 807	1,084,403	142,554	1,320,372	278,477	375,071	45,693	529,444	60,640	1,293,547	98.00	26,825	—27,125	52,514	45,331
San Antonio & Aransas Pass	Feb. 739	412,397	45,544	490,266	143,835	131,817	10,529	200,202	22,627	508,142	103.60	—17,876	—34,232	—48,469	50,569
	2 mos. 739	823,803	102,828	994,919	285,076	286,818	22,293	412,966	45,802	1,051,231	105.60	—56,312	—89,524	—117,976	33,434
San Antonio, Uvalde & Gulf	Feb. 318	130,905	15,283	151,161	26,454	13,955	4,801	55,396	6,776	107,382	68.30	49,779	46,085	30,437	12,006
	2 mos. 318	223,027	34,953	278,790	43,546	30,591	10,304	108,648	12,809	205,898	73.90	72,892	65,345	37,748	16,836
Seaboard Air Line	Feb. 3,778	3,294,877	1,086,916	4,953,507	650,394	840,389	167,753	1,892,240	174,967	3,819,079	77.10	1,134,518	913,213	704,213	941,507
	2 mos. 3,721	6,405,757	2,307,848	9,753,422	1,312,508	1,744,528	332,986	3,829,650	343,458	7,734,420	79.30	2,019,002	1,576,586	1,248,337	1,623,808
Southern Ry.	Feb. 6,868	8,274,747	2,202,587	11,335,919	1,586,253	1,981,795	235,281	4,055,741	297,250	8,243,213	72.70	3,092,706	2,364,699	2,207,333	1,929,879
	2 mos. 6,868	16,220,008	4,978,232	22,991,262	3,193,188	4,241,066	467,419	8,351,302	614,675	17,042,143	74.10	6,949,119	4,599,640	4,287,479	3,681,411

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1925—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1924.
Alabama Great Southern	Feb.	318	596,523	139,157	$781,898	$105,833	$166,390	$21,214	$248,811	$24,045	$573,110	73.30	$208,788	$164,687	$189,029	$149,572
	2 mos.	318	1,178,981	302,062	1,572,497	221,738	343,878	41,338	516,681	50,651	1,187,969	75.50	384,528	288,889	331,441	289,422
Cin., New Orleans & Tex. Pacific.	Feb.	338	1,389,716	333,389	1,827,298	213,439	331,138	41,461	527,490	46,384	1,180,180	64.60	647,118	573,527	557,106	410,526
	2 mos.	338	2,717,689	790,794	3,703,052	422,410	698,049	82,513	1,087,734	97,305	2,426,439	65.40	1,282,613	1,114,983	1,094,185	815,787
Georgia Southern & Florida	Feb.	401	324,633	117,540	484,494	62,103	52,695	9,659	176,686	9,577	317,230	65.50	167,264	137,984	80,837	42,441
	2 mos.	401	583,664	267,508	979,922	132,038	104,669	19,222	348,096	20,047	637,367	65.00	342,555	288,827	184,584	87,528
New Orleans & Northeastern	Feb.	207	368,176	74,181	472,261	60,763	63,140	11,130	132,537	14,940	286,460	60.70	185,801	143,061	121,701	108,116
	2 mos.	207	716,709	155,502	931,655	121,964	146,983	22,116	279,723	31,007	609,726	65.40	321,929	233,707	192,621	197,186
Northern Alabama	Feb.	110	113,276	10,097	125,839	18,913	4,874	1,993	36,730	3,438	65,948	52.40	59,891	54,766	27,255	36,747
	2 mos.	110	216,787	21,217	242,931	45,668	9,617	4,361	75,777	6,164	141,567	58.30	101,344	92,094	39,548	83,774
Southern Pacific	Feb.	8,722	9,566,870	3,107,056	14,030,892	2,287,476	2,714,431	293,977	5,365,375	521,799	11,432,971	81.50	2,597,921	1,107,455	1,170,241	2,321,673
	2 mos.	8,722	19,764,409	6,458,955	29,002,585	4,537,626	5,693,420	644,306	11,165,906	1,046,522	23,577,768	81.30	5,424,817	2,710,987	2,805,677	4,060,291
Atlantic Steamship Lines	Feb.	...	829,599	37,785	986,431	12,634	172,940	20,543	770,687	28,674	1,005,478	101.90	—19,047	—33,630	—33,762	82,726
	2 mos.	...	1,464,597	73,702	1,782,417	25,861	320,940	42,884	1,621,640	57,322	2,068,647	116.10	—286,230	—315,943	—320,143	100,062
Galveston, Harrisb'g & S. Antonio	Feb.	1,379	1,426,227	377,956	1,927,398	340,163	394,963	46,750	630,220	90,659	1,530,542	79.40	396,856	323,881	239,892	199,847
	2 mos.	1,379	2,694,684	792,407	3,759,539	657,167	758,139	99,307	1,298,578	176,586	3,027,071	80.50	732,468	586,577	420,894	300,265
Houston & Texas Central	Feb.	929	904,945	239,536	1,214,290	271,990	232,052	30,705	394,566	47,026	978,315	80.60	235,975	104,656	63,104	—11,274
	2 mos.	929	2,171,278	533,848	2,863,478	474,504	491,420	57,475	904,712	88,894	2,020,790	70.60	842,688	640,484	515,527	4,299
Houston, East & West Texas	Feb.	191	189,390	32,748	233,668	56,620	53,137	4,150	86,109	9,189	209,114	89.50	24,554	14,463	1,876	—24,137
	2 mos.	191	380,046	71,370	476,526	108,802	111,645	7,524	181,136	17,928	425,768	89.30	50,758	31,131	—2,147	—63,149
Louisiana Western	Feb.	207	218,564	76,298	319,338	73,651	55,371	12,463	96,624	17,838	259,611	81.60	59,727	41,335	29,650	51,251
	2 mos.	207	454,668	156,000	663,195	127,368	124,530	24,840	204,310	35,373	524,864	79.10	138,331	88,212	61,449	142,168
Morgan's L. & T. R. R. & S. S. Co.	Feb.	400	503,265	124,263	674,409	122,485	164,947	19,780	289,025	37,777	638,552	94.70	35,857	—14,417	—63,091	—40,891
	2 mos.	400	1,037,355	251,491	1,389,383	232,142	353,020	39,114	594,108	72,571	1,301,534	93.70	87,849	—12,674	—109,086	—106,267
Texas & New Orleans	Feb.	544	636,497	145,979	832,126	142,142	191,254	12,431	282,890	34,369	668,113	80.30	164,013	131,707	100,428	—20,727
	2 mos.	526	1,266,680	306,988	1,667,877	280,779	424,120	28,549	602,001	58,256	1,402,588	84.10	265,289	200,587	167,284	—158,756
Spokane, Portland & Seattle	Feb.	554	411,773	90,862	557,902	69,840	105,936	9,603	180,834	20,424	393,754	70.60	164,148	89,595	66,655	185,484
	2 mos.	554	806,683	192,541	1,127,535	128,026	216,646	19,946	376,318	41,760	797,343	70.70	330,192	182,123	123,946	285,143
Tennessee Central	Feb.	296	191,971	31,358	239,296	44,731	47,416	7,244	91,037	10,208	200,586	83.80	38,716	38,475	16,613	40,073
	2 mos.	296	379,048	70,756	480,541	96,119	95,583	14,794	191,952	21,051	419,407	87.30	61,134	54,639	10,764	51,718
Terminal Railroad Assoc. of St. L.	Feb.	37	.....	.....	399,346	40,001	44,537	844	146,660	8,488	243,413	61.00	155,933	100,170	193,840	119,729
	2 mos.	37	.....	.....	870,264	86,497	81,768	1,808	340,995	16,974	534,471	61.40	335,793	220,104	416,032	244,087
East St. Louis Connecting	Feb.	1	.....	.....	177,188	14,991	14,740	267	68,089	2,452	100,539	56.70	76,649	70,366	48,563	58,405
	2 mos.	1	.....	.....	419,625	31,348	25,049	570	156,819	4,840	218,626	52.10	200,999	189,999	146,188	124,560
St. L. Merchants' Bridge Term.	Feb.	9	.....	.....	372,032	77,372	30,370	796	178,022	6,550	293,110	78.80	78,922	43,440	36,316	72,040
	2 mos.	9	.....	.....	838,006	137,566	53,312	1,706	400,984	13,057	606,625	72.40	231,381	172,624	167,717	146,234
St. Louis Transfer Ry.	Feb.	6	.....	.....	58,297	7,373	6,992	144	34,447	1,183	50,139	86.00	8,158	7,674	1,122	1,244
	2 mos.	6	.....	.....	156,604	14,497	12,463	308	97,002	2,349	126,619	80.90	29,985	29,107	16,152	5,472
Toledo, Peoria & Western	Feb.	247	89,575	30,918	130,350	20,541	40,304	2,084	64,809	6,864	134,602	103.30	—4,252	—10,264	—17,594	730
	2 mos.	247	209,548	58,473	288,597	43,920	81,952	4,252	150,034	13,886	293,977	101.90	—5,380	—17,393	—35,589	—19,264
Trinity & Brazos Valley	Feb.	368	254,035	11,253	273,940	49,619	54,823	3,781	114,487	11,807	234,353	85.50	39,587	31,738	4,506	—54,207
	2 mos.	368	767,416	26,465	816,704	93,859	100,801	7,559	318,692	23,899	544,155	66.60	272,549	256,637	158,044	—138,080
Ulster & Delaware	Feb.	128	33,764	10,713	72,188	14,490	17,952	1,879	46,862	6,178	87,361	121.00	—15,173	—20,673	—22,152	—15,801
	2 mos.	128	64,352	22,050	146,084	27,294	37,712	3,585	95,286	13,339	177,216	121.30	—31,132	—42,132	—44,636	—34,974
Union Railroad of Penna.	Feb.	45	.....	.....	847,859	76,856	329,408	164	416,029	9,551	832,008	98.10	15,851	4,851	35,656	122,899
	2 mos.	45	.....	.....	1,755,738	147,359	698,946	355	870,031	20,176	1,736,867	98.90	18,871	—3,129	52,921	253,975
Union Pacific	Feb.	3,687	5,103,690	1,080,117	6,833,070	603,979	1,700,933	125,158	2,103,463	275,358	4,943,011	72.30	1,890,059	1,203,325	1,238,683	1,903,275
	2 mos.	3,687	10,651,271	2,356,238	14,356,878	1,273,174	3,437,138	262,307	4,555,103	558,970	10,365,600	72.20	3,991,278	2,618,078	2,693,489	3,749,874
Oregon Short Line	Feb.	2,414	1,739,576	327,694	2,239,430	263,976	486,817	40,880	772,590	103,137	1,712,818	76.50	526,612	281,090	256,553	348,973
	2 mos.	2,414	3,926,951	712,501	4,996,597	537,780	1,016,809	84,570	1,688,716	214,123	3,637,932	72.80	1,361,665	870,329	824,737	795,177
Oregon, Wash. R. R. & Nav. Co.	Feb.	2,236	1,397,265	310,856	1,885,361	280,696	346,079	58,734	774,100	111,656	1,598,954	84.80	286,407	116,414	45,375	427,803
	2 mos.	2,236	2,946,628	673,774	3,986,117	584,061	726,381	118,905	1,696,584	227,784	3,403,748	85.50	577,369	237,355	100,196	689,167
Los Angeles & Salt Lake	Feb.	1,207	1,242,437	291,441	1,679,314	320,841	372,136	62,204	602,827	65,474	1,478,231	88.00	201,083	62,970	—1,365	232,358
	2 mos.	1,207	2,696,812	655,494	3,651,441	642,917	758,680	123,912	1,289,638	129,720	3,056,832	83.70	594,609	318,226	200,336	322,960
St. Joseph & Grand Island	Feb.	258	229,924	19,523	263,208	33,731	48,166	2,881	86,403	11,502	182,683	69.40	80,525	63,956	52,610	50,174
	2 mos.	258	478,822	42,526	549,422	68,432	90,868	5,707	197,990	24,064	387,564	70.50	161,858	128,720	105,065	74,250
Utah	Feb.	102	114,901	446	115,956	5,289	39,511	347	30,051	5,641	80,839	69.70	35,117	29,982	23,647	—3,017
	2 mos.	102	334,227	1,150	337,143	29,720	87,142	770	82,788	11,608	212,028	62.90	125,115	111,844	88,889	41,437
Virginian	Feb.	545	1,330,497	62,858	1,486,671	237,848	349,262	12,327	370,981	33,805	1,002,105	67.40	484,566	358,732	384,091	566,843
	2 mos.	545	2,983,031	127,824	3,322,478	443,316	685,950	24,808	804,233	69,448	2,025,045	60.90	1,297,433	1,044,444	1,096,780	972,821
Wabash	Feb.	2,524	4,157,275	591,146	5,126,694	643,170	977,272	141,968	2,063,110	147,241	3,998,090	78.00	1,128,604	896,053	601,957	624,183
	2 mos.	2,524	8,497,260	1,297,309	10,532,955	1,272,482	2,063,561	281,994	4,324,770	314,270	8,307,195	78.90	2,225,760	1,760,165	1,193,203	951,725
Western Maryland	Feb.	804	1,395,710	52,560	1,501,610	185,304	310,728	35,525	471,356	45,998	1,058,948	70.50	442,662	382,662	351,170	343,633
	2 mos.	804	2,949,053	114,055	3,176,920	392,010	679,989	73,259	991,854	91,641	2,251,240	70.90	925,680	805,580	738,587	667,881
Western Pacific	Feb.	1,042	744,667	102,086	905,578	156,120	207,147	36,580	372,697	33,338	831,615	91.80	73,963	—5,696	127,479	84,304
	2 mos.	1,042	1,609,867	204,580	1,931,616	292,426	417,337	71,557	806,462	70,001	1,692,542	87.60	239,074	81,457	321,641	198,116
Wheeling & Lake Erie	Feb.	511	1,235,851	45,546	1,357,406	135,197	385,765	29,221	466,706	43,153	1,062,397	78.30	295,009	186,302	188,775	226,769
	2 mos.	511	2,485,400	101,227	2,749,124	254,901	795,838	57,538	990,565	86,922	2,190,588	79.70	558,536	344,862	337,800	431,492

(*Continued from page* 947)

province for the large outpouring of money, that it would be quite unfair that the sister province should tap this district with a view to divert the traffic to Toronto.

"We cannot find any reason why Ontario would spend two millions of money belonging to the people of Ontario to extend their railway into Quebec if it is not to the benefit of their own Province."

Wage Statistics for January

In January, 1925, the number of employees reported by Class I railroads was 1,728,333, a decrease of 8,366 or 0.5 per cent, as compared with the previous month, according to the Interstate Commerce Commission's monthly bulletin of wage statistics. The total compensation increased $3,011,216 or 1.3 per cent. Compared with the returns for January, 1924, the employment shows a decrease of 1.2 per cent and the total compensation an increase of 1.6 per cent. The most substantial change in straight time hourly earnings appears for the train and engine service employees, whose average straight time earnings per hour increased from 73.8 cents to 77.5 cents. For all employees reported on an hourly basis, the average straight time earnings per hour were 57.6 cents in January, 1924, and 58.8 cents in January, 1925.

The monthly earnings, by groups, were as follows:

Group	Monthly earnings of: Employees reported on daily basis		Employees reported on hourly basis	
	Jan., 1925	Jan., 1924	Jan., 1925	Jan., 1924
Executives, officials, and staff assistants	$439	$433	...	...
Professional, clerical, and general	184	182	$126	$124
Maintenance of way and structures	243	240	94	90
Maintenance of equipment and stores	247	244	126	124
Transportation (other than train, engine, and yard)	98	97	126	124
Transportation (yardmasters, etc.)	257	253	157	150
Transportation (train and engine service)	...	...	201	192

Increase or decrease in the number of employees, by groups, January, 1925, with comparisons, was as follows:

Group	January, 1925 compared with: Dec., 1924	Jan., 1924
Executives, officials, and staff assistants	88	143
Professional, clerical, and general	(d) 789	(d) 2,855
Maintenance of way and structures	(d) 11,383	(d) 5,730
Maintenance of equipment and stores	4,025	(d) 8,954
Transportation (other than train, engine, and yard)	(d) 3,278	(d) 2,090
Transportation (yardmasters, etc.)	231	(d) 992
Transportation (train and engine service)	2,740	(d) 1,116
Net decrease	(d) 8,366	(d) 21,594

Second Supplementary Report on Cajon Derailment

The Interstate Commerce Commission, in a third report on the derailment of a freight train because of excessive speed, which occurred on the Atchison, Topeka & Santa Fe, near Cajon, California, on July 15, 1923, finds that the first supplementary report had criticized the company regarding airbrake practice too severely; and that now the rules are being enforced and obeyed on the part of all concerned.

The first report was noticed in the *Railway Age* of July 5, 1924. It was found that inefficient inspection and tests preparatory to descending steep grades had been habitual. The second report was noticed in the *Railway Age* of October 18, 1924, page 679. It was found that unsafe practices had not been discontinued, and the officers were criticized for not having made the rules more strict and effective. It is now found that rules in the airbrake instruction book covered the points which had been omitted in the train rule book, and the report says that it was the practice, not the precepts, which should have been criticized.

Now, in the third report, it appears that, on the grade in question, every train is required to have 100 per cent airbrakes in operation, and the inspector is satisfied that the rules are rigidly enforced and obeyed. Records of the examination of 54 freight trains moving westward from Barstow to San Bernardino during the first week of February show that they arrived at San Bernardino with the brakes cut out on only two out of the total of 2,469 cars making up the trains. It is also noted that the requirement of 90 lb. brake-pipe pressure on westbound freight trains out of Barstow is still in effect, while there is also a rule restricting the tonnage on the descending grade between Summit and San Bernardino to 75 tons per operative brake.

"Cross Crossings Cautiously"

A handsome 24-page pamphlet, 4½ in. by 7½ in. with a colored cover, has been prepared by the Safety Section of the American Railway Association, setting forth the highway crossing situation, and J. C. Caviston, secretary of the section, 30 Vesey street, New York City, has sent out sample copies to the railroad companies with a view to securing the general distribution of the pamphlets, in all fields where they will be likely to get the attention of automobile owners and drivers.

Space is left on the front cover for the name of a railroad company ordering the booklets to be issued on its own account, and the whole of the last page can be used for an advertisement

of the individual road. Including this printing on the cover the cost runs from $25.80 for 500 and $38.50 for 1,000 down to $27.50 per thousand in lots of 100,000.

Mr. Caviston has also sent out samples of posters 22 in. by 28 in., and 14 in. by 22 in.; cards 3½ in. by 5½ in., and small stickers bearing a picture of an automobile wreck, for use in educating the public as was done for four months last summer. The cost of these varies according to size and quality; in general the prices are lower than they were last year.

The picture, which is reproduced on the pamphlet mentioned above, is shown herewith in miniature.

The author of the book seems to have covered the subject very judiciously and thoroughly, while yet avoiding the mistake of printing more words than the reader is likely to assimilate.

The Pennsylvania Names Its Fast Freights

Fast through freight trains on the Pennsylvania Railroad are going to be designated by names instead of numbers. Names have been chosen to appeal to the imagination. The old designation "Star Union Line" has been revived and will be borne by the fast freight to Chicago from Atlantic Seaboard points. This was for many years a famous trade name of the Pennsylvania, but was abolished during war control of the railroads. "The Gas Wagon" has been selected for the eastbound train from Detroit to seaboard, which largely carries automobile freight.

The complete list follows:

"The Ironmaster," Pittsburgh to New York.

"The Accelerator," Toledo to Pittsburgh.

"The Bison," from Buffalo to the Atlantic Seaboard.

"The Standard," from Pittsburgh to Toledo.

"The Blue Goose," Atlantic Seaboard to Buffalo.

"The Comet," Atlantic Seaboard to St. Louis.

"Uncle Sam," St. Louis to Atlantic Seaboard.

"The Greyhound," from St. Louis to Atlantic Seaboard.

"The Eclipse," St. Louis to Atlantic Seaboard.

"The Yankee," from New England and Long Island points to Chicago.

"Star Union Line," from Atlantic Seaboard points to Chicago, carrying all freight and making fourth morning delivery.—Symbol PF 1.

"Man o' War," Chicago to Atlantic Seaboard points, carrying stock and making third morning delivery.—Symbol FW 8.

"The Packer," Chicago to Atlantic Seaboard.

"The Mercury," Chicago to Atlantic Seaboard, carrying merchandise and making fourth morning delivery.—Symbol PF 2.

"The Arrow," Atlantic Seaboard to Detroit.

"The Gas Wagon," Detroit to Atlantic Seaboard.
"The Hummer," Pittsburgh to St. Louis.
"Blue Streak," Atlantic Seaboard to Indianapolis.
"The Bullet," Indianapolis to Atlantic Seaboard.
"The Rocket," Atlantic Seaboard to Cincinnati.
"Spark Plug," Cincinnati to Pittsburgh.
"The Eagle," Cleveland to Atlantic Seaboard.
"The Meteor," Atlantic Seaboard to Cleveland.

Union Pacific Military Organization

Close on the heels of the announcement that the 609th Engineers' Battalion of the United States Army, the military railway organization on the Chicago, Milwaukee & St. Paul, had its commission personnel up to full peace strength, came the report that a similar status had been reached by the 614th Engineers' Battalion, the military railway organization on the Union Pacific. A story on the Chicago, Milwaukee & St. Paul organization, which was the first to report its commission personnel fully recruited, appeared in the *Railway Age* of March 21, page 805. The Union Pacific battalion now has a full peace strength of 22 officers for its four companies, which include a headquarters company, a maintenance of way company, a maintenance of equipment company, an operating company and the medical staff. Enlistment of additional men for the ranks is now in progress with a number already enrolled. H. A. Adams, assistant to the general manager of the Union Pacific, is the commanding officer of the battalion, with headquarters at Omaha, Nebr. The organization of the commission personnel of the battalion is as follows:

614TH ENGINEERS' BATTALION; UNION PACIFIC UNIT

Name	*Grade*	*Civilian Duty*	*Location*
Headquarters			
H. A. Adams..	Major	Assistant to general manager.	Omaha, Neb.
A. L. Coey....	Captain Adjutant	Asst. superintendent.	Gr. River, Wyo.
A. H. Fetters.	Captain	Mechanical engineer.	Omaha, Neb.
G. H. Likert...	Captain	Fuel engineer.....	Omaha, Neb.
J. J. Hansen..	Captain Supply Officer	Storekeeper	Omaha, Neb.
G. H. Sines....	Capt. unassigned	Asst. to vice-president	Omaha, Neb.
H. P. Needham	First lieutenant service agent.	Chief clerk to general manager.	Omaha, Neb.
Company A (M. of W.)			
A. R. Jurden..	Captain	Division engineer....	Kansas City, Mo.
W. A. Batey..	First lieutenant.	Supervisor bridges & buildings.	Omaha, Neb.
F. C. Ayers...	First lieutenant.	Assistant engineer...	Kansas City, Mo.
G. H. Warfel..	Second lieutenant	Roadmaster	Fremont, Neb.
Company B (M. of E.)			
J. W. Burnett.	Captain	Master mechanic.....	Cheyenne, Wyo.
C. Gilpin.....	First lieutenant.	District foreman.....	North Platte, Neb.
C. Kinlayson...	First lieutenant.	General car foreman.	Omaha, Neb.
L. J. Adams...	Second lieutenant	Car foreman.....	North Platte, Neb.
Company C (Operating)			
C. A. Weir....	Captain	Division safety agent.	Omaha, Neb.
C. M. Highsmith	First lieutenant.	Trainmaster	Omaha, Neb.
H. H. Larson..	First lieutenant.	Terminal trainmaster.	Omaha, Neb.
T. W. Hayes..	Second lieutenant	Signal supervisor....	Omaha, Neb.
Medical Staff			
Dr. L. T. Hall.	Major	Surgeon, Union Pacific	Omaha, Neb.
Dr. Otis Martin	Captain	Surgeon, Union Pacific	Omaha, Neb.
Dr. R. G. Drake, D. D. S.	First lieutenant.	Dentist, Union Pacific	Omaha, Neb.

To Hold Transport Conference at Chicago

Co-ordinated Transportation will be the theme of a regional Motor Transport Conference to be held under arrangements made by the National Automobile Chamber of Commerce at Chicago on Tuesday and Wednesday, May 26 and 27. Among the speakers will be leading automobile, railroad, trolley and shipping executives from Chicago and the middle west, and the program will be similar to that of the New England Motor Transport Conference held at Boston, Mass., on December 8 to 9, 1924.

Besides discussion of the place of the motor truck and motor bus in short-haul transportation, there will be statements from varying points of view upon the wisdom of federal regulation of common carrier vehicles, a subject which has become of unusual importance since recent decisions of the U. S. Supreme Court indicating that such motor vehicles are not subject to state regulation. How the motor truck and bus may be fitted into the solution of the city terminal problem, with special treatment of the Chicago situation, will be another subject. The conference will be built around the report of Committee IV of the U. S. Chamber of Commerce upon the Relation of Highway Transportation to Other Transportation Agencies.

Traffic News

The next meeting of the Midwest Regional Advisory Board will be held at the Hotel LaSalle, Chicago, on April 15. Five hundred railroad men and shippers are expected to attend.

The Southern Pacific of Mexico plans to open the first 85 miles of its extension in Mexico about July 1. This portion of the line extends from LaQuemada, Jalisco, to Amatitan. The completion of the last 30 miles to Orendain cannot be accomplished until some time next year on account of the heavy nature of the construction.

The Pacific Great Eastern plans to operate an automobile stage line from its northern terminus, Quesnel, B. C., north to a connection with the Canadian National at Prince George. The distance between the two points is about 75 miles. The twice-a-week train of this road now runs through between Squamish and Quesnel, 348 miles, in less than 24 hours.

Sunday Excursions

Five one-day excursions passed through Harrisburg, Pa., on Sunday, April 5, over the Pennsylvania Railroad carrying about 3,000 passengers. The Harrisburg Patriot lists them as follows:

Pittsburgh to New York (two trains).....	1,100 passengers
New York to Luray, Va.....	550 passengers
Clearfield, Pa., to Washington.....	300 passengers
Altoona, Pa., to Philadelphia.....	500 passengers
Philadelphia to Winchester, Va.....	650 passengers

New District Managers for A. R. A.

The Car Service Division of the American Railway Association has appointed a district manager in New England with headquarters at Boston; George C. Randall, promoted from Birmingham, Ala. The territory embraced will be the six New England states. Mr. Randall was born in Woodsville, N. H., and graduated at Norwich University in 1906. He has served as assistant to the manager of the Closed Car Section at Washington, and as district manager at Dallas, Tex.

Establishment of a district manager for the New England states is a continuation of the plan of the American Railway Association to maintain branch offices throughout the United States. Mr. Randall will be mainly concerned with the New England Regional Advisory Board, the organization of which is now being undertaken. He will be succeeded at Birmingham by R. W. Edwards.

The vacancy at Detroit caused by the promotion of Mr. Edwards will be filled by A. P. Stevens, for the last eight years inspector and car service agent in various parts of the country.

Save-to-Travel

The Christmas Savings Club plan has been modified to apply to passenger travel and two plans, somewhat alike, whereby persons lacking funds may save for vacation travel, have been approved by railroads.

The Save-to-Travel Association has been organized under the sponsorship of Milton W. Harrison, vice-president of the Bowery Savings Bank, New York, and has been approved by railroad and steamship lines. The plan of the association is to have persons interested make deposits in the bank with a view to using the money for traveling. The association will send to depositors advertisements suggesting vacation travel and calling attention to points of interest. Under the plan it is not compulsory for the depositor to use his deposits for vacation travel if at any time he should change his mind. The plan has already been adopted by a number of steamship lines and a meeting will be held in Chicago on April 21 at which railroads will confer on the proposition.

The second plan is that adopted by four companies under which deposits are made with ticket agents and the savings are handled by the railroad. With this plan it is necessary that the money be spent for travel. This plan has been adopted by the Illinois Central, the Chicago & Eastern Illinois, the Gulf, Mobile & Northern, and the Chicago, Duluth & Georgian Bay Transit Company. Tickets sold under this plan can be used only on the lines of the roads selling the tickets.

Commission and Court News

Interstate Commerce Commission

The commission has announced that it will hear oral argument, in connection with the argument already assigned for April 27 and 28 at Washington on the lake cargo coal rate cases, on the petition filed by interveners in these cases located in West Virginia, Kentucky, Tennessee and Virginia, for further hearing in order that the conditions which at this time prevail in the coal industry may be put on the record, and considered by the commission in compliance with the Hoch-Smith resolution.

Complainants Propose New Rate Rule

The Live Poultry & Dairy Shippers' Traffic Association, through C. R. Hillyer, has filed with the commission a statement of exceptions to the examiner's tentative report on this association's complaint involving rates on poultry, one of which is that the examiner has failed to take note of the Hoch-Smith resolution, approved January 25, which, it is contended, takes away from the commission the power to fix maximum reasonable rates upon farm products. There is no longer power in the commission, Mr. Hillyer says, to fix any rate whatsoever on farm products other than the "lowest possible lawful rates compatible with the maintenance of adequate transportation."

Court News

Engineers Qualified Experts as to Power of Air Pumps

The West Virginia Supreme Court of Appeals holds that locomotive engineers with from 10 to 15 years' experience in operating engines were qualified to testify as to whether or not one air pump was sufficient to control a heavy train.—Lambert v. Virginia Ry. Co. (W. Va.) 122 S. E. 457.

United States Supreme Court

Federal Question Not Considered Where Non-Federal Grounds for State Court's Decision Sufficient

A consignee sued the Union Pacific for damages resulting from false recitals of dates contained in substituted order bills of lading for four cars of wheat. These bills, contrary to the facts stated, gave dates of origin prior to November 9, 1920. The consignee alleged that, relying on the false recitals in the substituted bills, he paid certain drafts on shipments which were too late, and that he was compelled to dispose of wheat at considerable loss.

The Kansas Supreme Court affirmed judgment for the railroad, rejecting plaintiff's contention that the Federal Bill of Lading Act makes order bills of lading strictly negotiable and that therefore the railroad was liable to him for the damages; and proceeded to consider other questions raised, which were of a non-federal character. The United States Supreme Court says: "It is well settled that where the Supreme Court of a state decides a federal question in rendering a judgment, and also decides against the plaintiff in error upon an independent ground not involving a federal question and broad enough to maintain the judgment, the writ of error will be dismissed without considering the federal question. * * * The Supreme Court of Kansas rested its judgment, affirming the action of the trial court, upon a non-federal ground broad enough to sustain it. The answer denied the existence of any trade usage to accept as accurate recitals as to dates in bills of lading, also that the Denver agent had power to issue the substituted bills. It asserted that petitioner was obligated to accept the grain irrespective of the dates of original shipments, and that if due diligence had been exercised no loss would have occurred. These denials and assertions raised questions under the state laws. They were substantial and broad enough to sustain the ruling of the trial court."

Judgment for the railroad was therefore affirmed.—Browne v. Union Pacific. Decided March 2, 1925. Opinion by Mr. Justice McReynolds.

Foreign Railway News

Mexican Lines to Be Returned—Rumor

It is now reported that President Calles will return the National Railways of Mexico to their private owners about July 1. The return of these lines has been contemplated for several years.

Wider Diffusion of Ownership in Britain

LONDON.

Walter Runciman, Member of Parliament, recently made the statement at a public meeting that there are over one million individual holders of British railway securities and that the indirect holders would swell this total. He stated that there had been a much wider diffusion of security ownership in the last 20 years in the United Kingdom, the total of either direct or indirect "capitalists" having increased by 15,000,000.

New Railways for Spain

LONDON.

The Railway Council of Spain has recommended the construction of 5,677 miles of new line. The lines to be constructed are divided as follows: (1) lines of national importance; (2) lines of regional importance; and (3) local lines. Of the new lines recommended, 1,060 miles are already under construction. The authorization of these new lines was based on the severe shortage of adequate means of communication and the opinion that the undertaking of the work would aid general business.

Miscellaneous

The following brief items have been sent to the Bureau of Foreign and Domestic Commerce from its agents in various parts of the world:

A report on the market for rolling stock in Ecuador by the consul-general at Guayaquil may be obtained by interested parties upon application to the Transportation Division of the Bureau of Foreign and Domestic Commerce.

An appropriation of 50,383,362 pesos (about $21,000,000) for the Argentine State Railways has been approved, 48,473,454 pesos of which have been allotted for operating expenses, and 1,909,908 pesos for new construction. As the government-owned North Central Argentine, as well as the Buenos Aires Western (British) and the Buenos Aires General (French) all are short of rolling stock, it is probable that the financial reorganization will put the State Railways in the market for new rolling stock and also equipment for repair shops.

The Chinese Eastern Railway materials department requires bids in American dollars when quotations are offered on the supply of materials from Europe or America, according to a recent order issued by the railway.

Through tariffs and lower freight rates between Austria and Italy have been negotiated at a conference between representatives of the two governments at Rome. The Italian Government has agreed to lower freight rates on Austrian lumber, agricultural machinery, wrapping paper, screws, wire, wire coils, scythes, sickles, cellulose and kaolin, and conversely Austria has made concessions for the principal agricultural products exported by Italy.

Motive power and rolling stock on the Italian State Railways during 1924 was improved by the addition of 40 steam and 147 electric locomotives, six passenger cars, one baggage car, and 417 freight vehicles for the standard gage lines. During the year, 116 steam locomotives were withdrawn from service, and 707 passenger cars, 202 baggage and mail cars, and 4,463 freight cars were retired.

Sixty locomotives and 20 tenders for the Czechoslovak Railways will be purchased shortly, according to an announcement by the Ministry of Railways. The Ministry of Finance has been requested to provide the necessary funds, and the appropriation is expected to be made available this month. It is understood, however, that only Czechoslovak manufacturers will be invited to submit bids.

The 15 per cent surcharge on l. c. l. shipments to the interior of Mexico was abolished by the National Railways of Mexico, effective March 30, 1925.

Labor News

Enginemen and firemen on the Southern Pacific lines in Texas and Louisiana have been granted a wage increase of approximately 5 per cent, retroactive to September 21, 1924. This increase is in line with similar ones which were awarded previously on the Southern Pacific, Pacific system, and on other western roads.

Labor Board Decisions

Working Rules for Yardmasters

The following rules to govern the working conditions of yardmasters were approved by the Railroad Labor Board in a decision on a dispute between the Wabash and the Railroad Yardmasters of America. Under the decision each regularly assigned yardmaster will have an established time to go on duty and will be paid a daily rate which shall be determined by multiplying the regular monthly rate by 12 and dividing the result by 341. In filling vacancies and new positions as yardmasters, fitness, ability and seniority shall govern and the senior applicant will be given the position, provided it is the judgment of the immediate supervising officer that the applicant has the necessary ability. It is understood that the company reserves the right to fill such positions with other employees when advisable. Yardmasters regularly assigned seven days' work a week will be granted two rest days a month without loss of pay.—*Decision No.* 3102.

Demotion of Carpenter Foreman Not Covered By Agreement

A carpenter foreman on the New York, New Haven & Hartford, after three years' service as carpenter and 10 years as carpenter foreman, was demoted and his position assigned to another man, his junior in the service. The explanation offered was that his successor, while employed as a substitute during a vacation period, had demonstrated greater ability as a foreman in that his time books showed a better labor production. This position was contested by the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers, who contended that the action of the railroad was a discrimination and violation of seniority rights; and after unsatisfactory hearings with the railroads, carried the case before the labor board. The carrier's position was that the agreement with the brotherhood nowise covered foremen and contained no provision relating to the working conditions of the foremen. The decision of the board is that in the absence of any rule in the existing agreement governing the case the claim of the employees is denied.—*Decision No.* 3116.

Wages and Rules for Yardmasters

In a decision on a dispute between the Minneapolis, St. Paul & Sault Ste. Marie and the Railroad Yardmasters of America, the Railroad Labor Board has decided on the following proposed rules in regard to working conditions and wage rates. The request of the employees for the inclusion of an article to the effect that yardmasters will not be required to perform work other than that of a supervisory character, was denied. The proposal that yardmasters should retain their seniority in the class of service from which they were promoted was held by the board to be a matter of negotiation between the organizations directly concerned and the management. After hours of service have been reduced from 12 to 8 hours a day, the present wage rates are to be reduced $20 a month in each rate.—*Decision No.* 3130.

In a dispute over wage rates between the Southern and the Railroad Yardmasters of America, the Labor Board decided that the rates for yardmasters and assistant yardmasters should be the rates established by Decision No. 2 reduced by the decreases authorized in Decision No. 147. In this case the board stated its disapproval of the practice of continuing in the monthly rates of the yardmasters the monthly increase of $25, which in a sense was accepted by the representatives of the yardmasters in lieu of an eight-hour day, or the estimated value of the vacation rule which was forfeited.—*Decision No.* 3124.

Equipment and Supplies

Locomotives

THE SEABOARD AIR LINE has ordered 20 Mikado type locomotives from the American Locomotive Company.

THE HAVANA CENTRAL is inquiring for 6 Mountain type locomotives for use on the United Railways of Havana.

THE DETROIT & TOLEDO SHORE LINE has ordered 2 switching locomotives and one Mikado type locomotive from the American Locomotive Company.

THE READING COMPANY has ordered 5, 0-8-0 switching locomotives from the Baldwin Locomotive Works. Inquiry for this equipment was reported in the *Railway Age* of March 7.

THE FLORIDA EAST COAST has ordered 15 Mikado type locomotives and six 0-8-0 switching locomotives from the American Locomotive Company. Inquiry for this equipment was reported in the *Railway Age* of March 21.

Freight Cars

THE CANFIELD OIL COMPANY, Cleveland, Ohio, has ordered 2 triple compartment cars from the Standard Tank Car Company.

THE MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE has placed an order with the Siems-Stembel Company for 42 underframes for caboose cars.

THE HERCULES GASOLINE COMPANY, Los Angeles, Cal., has ordered 10 tank cars of 10,050 gal. capacity, from the Standard Tank Car Company.

THE HOMER F. WILCOX COMPANY, Tulsa, Okla., has ordered 2 insulated tank cars of 8,050 gal. capacity, from the Standard Tank Car Company.

THE UNITED STATES GYPSUM COMPANY, Chicago, has ordered 12 air dump cars of 30 cu. yd. capacity, from the Koppel Industrial Car & Equipment Company.

THE ATLANTIC COAST LINE has ordered 500, 40-ton box cars and 200 phosphate cars, from the Tennessee Coal, Iron & Railroad Company. Inquiry for this equipment was reported in the *Railway Age* of March 14 and March 21.

THE SOUTHERN PACIFIC has placed orders for 3,400 freight cars as follows: For 2,000 A. R. A. single-sheathed box cars of 50 tons' capacity from the Standard Steel Car Company; 1,000 drop bottom gondola cars of 50 tons' capacity from the Tennessee Coal, Iron & Railroad Company and 200 oil tank cars of 50 tons' capacity from the Pennsylvania Car Company. An order for 200 automobile cars has been given to the Standard Steel Car Company, but this latter item has not yet been officially confirmed. Inquiry for this equipment was reported in the *Railway Age* of March 14.

Passenger Cars

THE PITTSBURGH, SHAWMUT & NORTHERN has ordered from the J. G. Brill Company one combination passenger and baggage gasoline rail motor car.

THE NEW YORK CENTRAL is inquiring for ten steel combination passenger and baggage cars and two 60-ft. 6-in. steel combination baggage and mail cars.

THE GRAYSONIA, NASHVILLE & ASHDOWN has ordered from the J. G. Brill Company one combination passenger and baggage gasoline rail motor car.

THE BALTIMORE & OHIO has placed an order with the Standard Steel Car Company for 20 additional all steel passenger cars, of the same type as the electric cars to be used in the electric zone on its Staten Island Lines. The new cars are to be used in steam service on the North Shore line and 10 of which will be so

equipped that they can be utilized as trailers in electric service if necessary. The Baltimore & Ohio has also placed an order with the J. G. Brill Company for two combination passenger and baggage gasoline rail motor cars.

Machinery and Tools

THE ERIE has placed an order for a 48-in. car wheel borer.

THE NEW YORK CENTRAL has placed an order for a 10-ton, 46-ft. span, gantry crane.

THE LEHIGH & HUDSON RIVER has placed orders for a car wheel borer and a 30-in. by 16 ft. lathe.

THE CHICAGO & EASTERN ILLINOIS has ordered one 35-ton crane pile driver from the Industrial Works.

THE SOUTHERN PACIFIC has placed an order with the Industrial Works for one industrial locomotive crane.

THE ATCHISON, TOPEKA & SANTA FE has ordered one 25-ton locomotive crane from the Industrial Works.

THE CINCINNATI, INDIANAPOLIS & WESTERN has ordered one crawl tread ditcher from the American Hoist & Derrick Company.

THE ATCHISON, TOPEKA & SANTA FE is inquiring for one 54-in. vertical heavy duty boring mill, one 16-in. by 10-ft. heavy duty type engine lathe, one 20-in. by 8-ft. heavy duty engine lathe and one 2½-in. double head cutter for bolts.

THE CHICAGO, BURLINGTON & QUINCY is inquiring for the following tools:

1 motor-driven 16-in. geared head engine lathe 48 in. between centers.
1 motor-driven 18-in. geared head engine lathe 48 in. between centers.
1 belt-driven double-end car axle lathe.
1 direct-connected 48-in. by 48-in. by 18-ft. planer with two heads on cross rail and two side heads equipped with variable speed reversing motor.
1 motor-driven 36-in. heavy duty shaper.
1 motor-driven horizontal boring mill.
2 belt-driven car wheel boring mills.
1 54-in. adjustable rotary milling machine.
1 20-in. upright drill.
1 pneumatic flanging machine.
1 bending machine.
1 400-ton belt-driven hydraulic horizontal type wheel press.
1 24-in. geared head engine lathe.
1 16-in. portable engine lathe.
1 20-in. geared head turret lathe.
1 32-in. heavy duty pattern back geared crank shaper.
1 heavy duty upright drill with capacity to drill 3-in. holes in solid steel.
1 heavy duty upright drill with capacity to drill 4-in. holes in solid steel.
3 20-in. upright drills.
1 heavy duty single spindle drill.
1 72-in. radial drill.
1 double spindle drill.
1 heavy duty radius internal grinder.
1 cock grinder.
1 pedestal double-end spindle grinder.
1 wet tool grinder.
1 dry grinder.
1 internal grinder arranged for motor belt drive
1 grinder arranged for motor belt drive.
5 6-in. by 6-in. high speed hack saws.
1 36-in. squaring shear.
1 200-lb. hammer.
1 pipe threading machine.
1 double head bolt cutter.

Miscellaneous

ROYAL STATE RAILWAY OF SIAM.—Bids are wanted up to 14 o'clock on June 29, by the Royal State Railway department of Siam, at Bangkok, for the supply of fittings for wagon construction, B. E. 2468 (steel angles and plates, bolts, body fittings and corrugated sheets). Specifications and plans are on file with C. P. Sandberg, 100 Broadway, New York.

Signaling

THE UNION PACIFIC has placed orders with the Union Switch & Signal Company for the materials necessary to equip the road between Sidney, Neb., and North Platte, 124 miles, double track, with the Union two-speed continuous inductive automatic train control system. This is the third complete engine division on which the Union Pacific is installing this system of train control. A total of 31 locomotives will be equipped for operation in this territory.

Supply Trade News

The Sellers Manufacturing Company, Chicago, will construct a one-story rolling mill 85 ft. by 160 ft. to cost $30,000.

C. F. Moore has been appointed manager of railroad sales of **Berry Bros.,** Detroit, Mich., to succeed E. F. Fisher, resigned.

The G. A. Gray Company, Cincinnati, Ohio, will construct a new plant to be devoted exclusively to the manufacture of planers.

The Mummert Lumber & Tie Company, Chicago, has opened a branch office in St. Louis, Mo., and has placed A. M. Martin in charge.

Robert H. Blackall, 7 East Forty-second street, New York, has arranged for the rights to sell the Lawson pipe wrench in the United States.

Walter Bentley of the advertising department of the Railway Journal, has been appointed sales manager of the **Waugh Equipment Company,** with headquarters in Chicago.

The Falls Hollow Staybolt Company, Cuyahoga Falls, Ohio, has opened a new office at 203 East Fifteenth street, New York, in charge of **L. Wechsler,** sales representative.

W. H. East, assistant electrical engineer of the Chicago, Burlington & Quincy, with headquarters at Chicago, has resigned to become railway sales engineer of the **Central Electric Company,** Chicago.

The tie treating plant of the **Ayer & Lord Tie Company,** at North Little Rock, Ark., was damaged by fire to the extent of $350,000 on April 2. This company is now preparing plans for an entirely new structure.

Sidney G. Johnson, president of the **Johnson Railway Supply Corporation,** 30 Church street, New York, will, after May 1 next, discontinue the representation of the Signal Accessories Corporation, of Utica, N. Y.

George C. Hayes, 225 Indiana Terminal Warehouse building, Indianapolis. Ind., has been appointed district engineer of the territory contiguous to Indianapolis for the **Elwell-Parker Electric Company,** Cleveland, Ohio.

The Truscon Steel Company, Youngstown, Ohio, will erect two warehouses in Buffalo, N. Y., on a piece of land 400 by 150 ft., at Bailey avenue and William street. One will be erected at once and another in the fall.

Tom Moore has been appointed representative for the **Gold Car Heating & Lighting Company,** New York, in charge of the southern territory, with headquarters in the Royster building, Norfolk, Va. Mr. Moore was formerly purchasing agent of the Virginian Railway.

At the quarterly meeting of the board of governors of the **National Paving Brick Manufacturers' Association** in Cleveland, Ohio, on March 17, **W. P. Whitney,** president of the Springfield Paving Brick Company, Springfield, Ill., was elected president. All other officers were re-elected.

The Walworth Manufacturing Company, Boston, Mass., recently formed an engineering products division to co-operate with the engineering production and sales departments of the company. **John M. Olmsted** has been appointed general manager of the division, with headquarters in Chicago and **Fred W. Duemler,** assistant manager at New York.

The Oneida Manufacturing Company, Green Bay, Wis., has been acquired by the **Railway Motors Corporation,** Railway Exchange building, Chicago, which has been incorporated under the laws of Delaware with a capital of $1,000,000. Officers of the new company will be, president, **L. W. Melcher,** president and general manager of the Oneida Manufacturing Com-

pany, **R. E. Frame,** treasurer of the Central Brake Shoe & Foundry Company, Chicago, **A. C. Deverall,** formerly general superintendent of motive power of the Great Northern, **A. A. Aggerbeck,** Chicago, **J. H. Taylor,** president of the McCartney National Bank, Green Bay, Wis. The Green Bay plant will be used to manufacture power units. Other plants will be established in various districts.

Locomotive Shipments in March

The Department of Commerce has compiled from reports submitted by the principal manufacturers the following table giving the shipments and unfilled orders of locomotives for March and the first three months of each of the past three years:

Year and month	Locomotives Shipments			Unfilled orders end of month		
	Total	Domestic	Foreign	Total	Domestic	Foreign
1923						
January	229	217	12	1,788	1,699	89
February	207	196	11	2,220	2,141	79
March	282	269	13	2,316	2,214	102
Total	716	682	36	.....	.....	..
1924						
January	151	147	4	276	344	32
February	99	92	7	499	466	33
March	132	128	4	534	494	40
Total	382	367	15	.....	.....	..
1925						
January	90	45	45	407	351	56
February	85	73	12	397	343	54
March	109	93	16	447	351	96
Total	284	211	73	.....	.....	..

Inland Steel Company

The annual report of the Inland Steel Company for the year ended December 31, 1924, shows net profits of $5,474,600 after interest, taxes, depreciation and contributions to the employees' fund or an equivalent after preferred dividends of $4.03 a share earned on the 1,182,799 shares of no par value common stock outstanding. The company reported a net profit of $5,274,958 in 1923 or an equivalent after preferred dividends of $4.01 a share earned on the common stock. The amount carried to surplus in 1924 was $1,817,602, compared with $2,278,645 in 1923 due to increased dividend payments. Current assets amounted to $23,929,270 against current liabilities of $3,837,549, leaving a net working capital of $20,091,721. The income account as of December 31, 1924, is as follows:

Income Account	1924	1923
Net earnings from operations after deducting administration expense and all charges for repairs and maintenance	*$7,748,590	*$7,399,364
Other income	295,973	274,044
Total profit for year	$8,044,563	$7,673,408
Depreciation and depletion	1,507,296	1,321,269
Interest on bonds	58,567	162,181
Estimated federal taxes	716,000	650,000
Payment to employees' fund	288,000	265,000
Net profit for year	$5,474,600	$5,274,958
Preferred dividend	700,000	525,000
Balance for common	$4,774,600	$4,749,958
Common dividends	2,956,998	2,471,313
Surplus for year	$1,817,602	$2,278,645

* Prior to 1923 federal taxes were deducted before showing net earnings.

Obituary

Frank Stephen Baldwin, who died in a private hospital at Morristown, N. J., on April 8, in his 87th year, was the inventor of the Monroe Calculating Machine which was among the first ever granted a patent by the U. S. Patent Office. It was received for patent in 1875 and for that patent he was awarded the John Scott medal, by the Franklin Institute of Philadelphia, and the only other inventor that year that received similar recognition from the Franklin Institute was George Westinghouse for his air brake. They were recognized for having the most meritorious inventions of the year 1875. The Monroe Calculating Machine was the development of that early Baldwin model. In 1911 Mr. Baldwin met Mr. Monroe and together they developed the Baldwin machine into the Monroe Calculating machine and formed a partnership.

Railway Construction

BALTIMORE & OHIO.—A contract has been awarded to William Dwyer, Cincinnati, Ohio, for an addition to the company's Kenyon avenue freight house in that city, to cost about $22,000.

BOSTON & ALBANY.—A contract for the erection of elevators for baggage in the baggage subway of the union station at Springfield, Mass., under construction by this company, has been awarded to the Bay State Elevator Company, Inc., of Springfield.

CENTRAL OF NEW JERSEY.—A contract has been awarded to the Wilson & English Construction Company, New York, for the depression of this company's tracks through Perth Amboy, N. J., at a cost of approximately $750,000.

CHICAGO, BURLINGTON & QUINCY.—This company, jointly with the Colorado & Southern, will construct additional terminal facilities at Denver, Colo., if plans for the joint operation of their freight terminals in that city, which are being considered, are approved.

COLORADO & SOUTHERN.—Plans have been made for the construction of a seven-mile branch line from Wheatland, Wyo.

DELAWARE, LACKAWANNA & WESTERN.—The Arthur McMullen Company, New York, has secured a contract for the construction of piers for a new bridge over the Buffalo river at Buffalo, N. Y., at a cost of approximately $85,000.

FLORIDA EAST COAST.—This company has authorized the following work:

Initial work at Miller shops (north of St. Augustine).

Construction of third building of the company's general office group at St. Augustine.

Construction of a number of long freight receiving tracks at Fort Pierce freight terminal.

Installation of automatic block signals between Jacksonville, Fla., and Bunnell (87 miles).

Initial work on the construction of large freight terminals at Bowden (near South Jacksonville) and Hialeah (near Miami).

Construction of 128 miles of second main track to be completed by January 1, 1926, in addition to the 68 miles now under construction.

This program will give the company 219 miles of double-tracked main line and it is expected that work to be done in 1926 will complete the double-tracking from Jacksonville to Miami. The new track will be laid with 90-lb. rail on creosoted ties protected with tie-plates. It is expected also that all of the company's double-track lines will be equipped with automatic block signals as rapidly as practicable.

NATCHEZ & SOUTHERN.—Plans for the new facilities at Natchez, Miss., include only a water tank and engine handling facilities, to cost together only $6,000. The construction of a machine shop, enginehouse and extensive locomotive repair facilities, which was reported in the *Railway Age* of April 4 as having been mentioned in other papers, is not considered.

PENNSYLVANIA.—A contract has been awarded to the Vang Construction Company, Cumberland, Md., for the substructure of a bridge over the Chesapeake & Delaware Canal at Canal, Del., at an approximate cost of $240,000.

PENNSYLVANIA.—Work on this company's new low-grade line from Canton, Ohio, to Bayard, has been divided into four sections for simultaneous construction. Contractors for grading and masonry on the four sections respectively, together with the approximate expenditure involved in each, are:

A. Guthrie & Company, Inc., St. Paul, Minn.	$500,000
Ferguson & Edmundson Company, Pittsburgh, Pa.	400,000
John F. Casey Company, Pittsburgh, Pa.	1,250,000
M. J. McMenamin, Philadelphia	300,000

TEXAS & PACIFIC.—A contract has been awarded to the R & T Construction Company, Houston, Texas, for excavation and filling, involving approximately 180,000 cu. yd. of earth, for the new yard and engine terminal facilities at Alexandria, La., which are to be used by the Texas & Pacific and the Missouri Pacific, reported in the *Railway Age* of February 28.

Railway Financial News

ALABAMA & VICKSBURG.—1924 *Earnings.*—Annual report shows income available for dividends in 1924 of $461,374 as compared with $491,232 in 1923. Selected items from the income statement follow:

ALABAMA & VICKSBURG

	1924	1923
Average mileage operated	141	141
Railway operating revenues	$3,601,427	$3,464,104
Total operating expenses	$2,812,103	$2,664,181
Net revenue from operations	$789,325	$799,923
Railway tax accruals	309,005	331,378
Railway operating income	$479,303	$466,306
Gross income	$650,395	$666,528
Total deductions from gross income	$189,021	$175,297
Net income	$461,374	$491,232

BALTIMORE & OHIO.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to extend the time of payment of $45,000,000 southwestern division first mortgage 3½ per cent bonds from July 1, 1925, to July 1, 1950, and to increase the interest rate from 3½ per cent to 5 per cent; also to sell at not less than par $8,910,000 of the bonds which have been nominally issued and held in the treasury. The company proposes to cause to be issued $45,000,000 of interim certificates, calling for the delivery of the bonds as extended, which have been sold to Kuhn, Loeb & Co., and Speyer & Co., and by them to the public.

BOSTON & MAINE.—*Approval of Reorganization Plan Indicated.*—Directors of the Boston & Maine were re-elected at the annual meeting of the stockholders in Boston on April 8. Nathan L. Amster of Boston, who headed a minority group of stockholders, was nominated but not elected.

The plan of financial readjustment recently announced by the general readjustment committee and described in detail in last week's *Railway Age* was outlined by Chairman W. Rodman Peabody. Nathan L. Amster, who has opposed the reorganization scheme, and Conrad W. Crocker, head of the Boston & Maine minority stockholders' protective association, spoke in favor of its general provisions. Referring to his pending petition for receivership for the railroad, Mr. Crocker said it implied no hostility, but that a form of receivership might aid in the reorganization. The necessity for the co-operation of security holders in making possible adjustment of heavy maturities in the next few years was emphasized by President James H. Hustis.

CENTRAL OF GEORGIA.—1924 *Earnings.*—Annual report of the Central of Georgia for 1924 shows net income available for dividends of $2,236,294 equivalent to $11.18 a share earned on the $20,000,000 outstanding stock, all of which is owned by the Illinois Central. Net income in 1923 totaled $3,656,354, equivalent to $18.28 a share. The Central of Georgia pays 6 per cent dividends. Selected items from the 1924 income statement follow:

CENTRAL OF GEORGIA

	1924	1923	Increase or decrease
Average mileage operated	1,920.64	1,920.64	.....
Railway operating revenues	$27,173,209	$26,198,846	$974,363
Maintenance of way	$4,201,129	$3,414,982	$786,147
Maintenance of equipment	4,866,691	5,605,847	—739,156
Transportation	10,148,632	10,197,285	—48,654
Total operating expenses	$21,071,051	$21,138,070	$—67,019
Operating ratio	.....	.....	.....
Net revenue from operations	$6,102,159	$5,060,776	$1,041,382
Railway tax accruals	$1,344,503	$1,177,929	$166,575
Railway operating income	$4,737,113	$3,846,937	$890,176
Equipment rents, net dr.	$128,848	$208,069	$—336,916
Joint facility rents, net dr.	52,463	110,635	—58,172
Net railway operating income	$4,555,803	$3,944,371	$611,432
Non-operating income	$1,038,035	$2,867,590	$—1,829,555
Gross income	$5,593,838	$6,811,961	$—1,218,123
Rent for leased roads	$372,959	$372,710	$249
Interest on funded debt	2,686,240	2,403,650	282,591
Total deductions from gross income	$3,357,544	$3,155,607	$201,937
Net income	$2,236,294	$3,656,354	$—1,420,060
Divs. on common stock, 6 per cent	$1,200,000	$1,200,000	—

DELAWARE & HUDSON.—*Segregation of Coal Properties Proposed.*—The board of managers of the Delaware & Hudson Company will recommend at the annual meeting of the stockholders on May 12, that consideration be given to the desirability of segregating the company's coal properties. Details of this intention are contained in the announcement of the stockholders meeting, reading as follows:

"You are especially notified that there will be presented at such meeting for consideration and appropriate action a recommendation by the board of managers of the corporation that the stockholders confer upon said board at this time authority, when in the judgment of said board it shall be desirable and advantageous to transfer to a corporation or corporations, all of whose stock shall be owned by the Delaware & Hudson Company, all or any of the anthracite lands and interests therein belonging to it and all of the real and personal property owned or controlled by it pertaining to the mining preparation and marketing of anthracite, including the stock of subsidiary corporations owning properties of that nature, for such consideration in the form of stock, bonds or other securities of the purchasing corporation or corporations or otherwise, as the board of managers may determine adequate and advantageous.

"At said annual meeting it will be proposed that the stockholders give their consent to such a sale, conveyance and transfer, when determined upon, in accordance with such recommendation."

DENVER & RIO GRANDE WESTERN.—*No Bond Interest.*—Directors have determined that there was no net income available for the payment of interest on May 1, 1925, upon the general mortgage bonds, or for the installment of the sinking fund for the calendar year 1924. Interest is payable only if earned up to February 1, 1925. The period under consideration except for 41 days was under the receivership.

DETROIT, TOLEDO & IRONTON.—*Ford Offers to Buy Minority Stock.*—Stockholders have been notified that the Detroit & Ironton, which is owned exclusively by Mr. Ford, will pay for Detroit, Toledo & Ironton stock its value as of April 1. Deducting the assets from the indebtedness, the value of the stock is estimated to be about $102 a share. The Fords own all but 4 per cent of the D. T. & I. stock. The annual meeting of the stockholders is on April 13.

Bonds Authorized.—The Interstate Commerce Commission has granted authority to issue not exceeding $1,181,000 of first-mortgage bonds to be sold at par. The proceeds are to be used to cover the cost of constructing a second main line track between Flat Rock, Mich., and Durban, 19 miles. The D. T. & I. has contracted to sell the bonds to the Ford Motor Company.

FORT WORTH & DENVER CITY.—*Trackage.*—This company has applied to the Interstate Commerce Commission for authority to extend its service from Fort Worth to Dallas, Tex., by acquiring trackage rights over the line of the Chicago, Rock Island & Gulf.

ILLINOIS CENTRAL.—*Mergers Approved.*—Stockholders of the Vicksburg, Shreveport & Pacific and of the Alabama & Vicksburg have approved the lease of their properties to the Yazoo & Mississippi Valley, subsidiary of the Illinois Central. See article "Illinois Central Acquires Control of Southern Feeder Lines," *Railway Age* of January 10, 1925.

JOLIET & CHICAGO.—*Annual Meeting.*—At the annual meeting of the Joliet & Chicago, in Chicago, on April 6, the control of the road was left in the hands of the Walker protective committee by a vote of 7,118 shares, against 4,812 in favor of the Chicago & Alton representatives. All retiring officers and directors were re-elected and in addition, Watson Washburn was elected a director. Special interest was attached to the annual meeting this year because of the letter sent by the Chicago & Alton, which operates the Joliet & Chicago under lease, to the stockholders urgently requesting that their proxies be given to it.

KANSAS CITY, MEXICO & ORIENT.—*Reorganization Plan.*—Sale of this property which took place March 27, 1924, was approved at Kansas City on March 24 by Federal Judge John C. Pollock. Approval was also given of the plan of reorganization outlined by Clifford Histed and associates who purchased the property. The reorganization plan calls for the formation of a new corporation with $7,500,000 capital stock which may consist of 75,000 shares of $100 par value or 75,000 shares of no par value.

Prior to taking over the property by the new company, William T. Kemper, present receiver, will apply to the Interstate Commerce Commission for an extension of a note now outstanding to the Secretary of the Treasury, dated December 1, 1921, and maturing December 1, 1923, of $2,500,000. The receiver is also to obtain an equipment loan of $1,000,000 to be certified by the Interstate Commerce Commission under section 210 of the Transportation Act 1920, the proceeds of which loan are to be used in the purchase of locomotives, freight cars and other equipment.

The owner will pay into the treasury of the new company such sum in cash which, added to the cash received from the receiver at the time of confirmation of sale (not including the $1,000,000 equipment loan mentioned) will amount to a total of $1,250,000, which payment shall be made on or before thirty days from the date of the approval of this agreement by the court.

Of the new stock, $3,500,000 fully paid and non-assessable, shall be issued to the owner.

The remaining $4,000,000 par value, of the capital stock shall be allotted for subscription by the several owners of the outstanding two-year six per cent gold notes. The subscription price shall be $80 per share payable in cash and installments without interest as follows: 20 per cent in cash to accompany the subscription; 25 per cent on or before September 1, 1925; 25 per cent on or before December 1, 1925, and the remaining 30 per cent on or before March 1, 1926.

Subscribers for such stock must deliver, with their subscription, their original two-year six per cent gold notes to the depositary.

The Kansas City, Mexico & Orient has been in receivership since April 16, 1917. It has outstanding $31,000,000 five per cent adjustment bonds due 1964 and $20,000,000 common stock all of both issues having been deposited as security for $5,640,000 2-year 6 per cent notes issued in 1914. Interest was paid on these notes but the principal was defaulted when due on April 30, 1925.

KANSAS CITY SOUTHERN.—1924 *Earnings.*—The annual report issued recently in preliminary form shows net earnings of $1,981,804 in 1924 as compared with $2,773,434 in 1923. Selected items from the income statement follow:

KANSAS CITY SOUTHERN (inc. Texarkana & Fort Smith)

	1924	1923	Increase or decrease
Average miles operated	854.09	841.55	12.54
Railway operating revenues	$21,024,012	$22,485,099	$—1,461,087
Maintenance of way	$2,972,755	$3,547,641	$—574,885
Maintenance and equipment	3,858,494	4,274,865	—416,370
Transportation	6,794,325	7,401,645	—607,320
Total operating expenses	$15,256,529	$16,708,811	$—1,452,283
Operating ratio	72.57	74.31	—1.74
Net revenue from operations	$5,767,484	$5,776,288	—8,804
Railway tax accruals	1,280,811	1,435,907	—155,097
Railway operating income	$4,481,381	$4,330,070	$151,311
Equipment rents, net dr.	$555,208	$686,295	$—131,087
Joint facility rents, net dr.	61,796	106,674	—44,878
Net railway operating income	$3,864,377	$3,537,101	$327,276
Non-operating income	462,710	1,312,174	—849,464
Gross income	$4,944,091	$5,642,244	$—698,153
Rent for leased roads	$125,414	$30,637	$94,777
Interest on funded debt	$1,899,587	$1,856,527	$43,060
Total deductions from gross income	$2,962,287	$2,868,811	$93,476
Net income	$1,981,804	$2,773,434	$—791,630
Divs. on pref. stock, 4 per cent	$840,000	$840,000	.....
Surplus for year carried to profit and loss	$1,141,804	$1,933,434	.....

LEHIGH VALLEY.—1924 *Earnings.*—Annual report for 1924 shows net earnings amounting to $7,352,038, equivalent to $6.06 per share on the $60,501,700 $50 par value common stock. These earnings compare with $8,586,613 in 1923, the latter including $6,892,055 in dividends received from the Lehigh Valley Coal Company which was formally segregated from the railroad company as of March 15, 1924. Coal Company dividends received by the railroad company in the year just closed amounted to only $643,057. Gross revenue of the company amounted to $76,374,805—the largest in the history of the company. They exceeded the 1923 gross by $439,652 although revenue from the transportation of anthracite coal decreased $3,244,613.

Selected items from the income account follow. Excerpts from the report appear on another page.

LEHIGH VALLEY

	1924	1923	Increase or decrease
Average mileage operated	1,374.62	1,373.72	.90
RAILWAY OPERATING REVENUES	$76,374,805	$75,935,154	$439,651
Maintenance of way	$8,421,393	$7,812,893	$608,500
Maintenance of equipment	18,609,488	23,762,227	—5,152,738
Transportation	30,558,447	32,140,661	—1,582,214
TOTAL OPERATING EXPENSES	$60,967,969	$66,754,214	—$5,786,246
Operating Ratio	80	88	—8
NET REVENUE FROM OPERATIONS	$15,406,837	$9,180,939	$6,225,897
Railway tax accruals	3,201,422	2,323,308	878,114
Equipment rents, net cr.	944,061	428,675	515,386
Joint facility rents, net dr.	145,859	148,100	2,240
NET RAILWAY OPERATING INCOME	$11,391,549	$6,573,120	$4,818,428
Dividend Income	2,238,328	8,681,062	—6,442,734
Total Other Income	3,257,957	9,583,294	—6,325,336
GROSS INCOME	$14,649,506	$16,156,414	—$1,506,908
Rent for leased roads	$2,301,307	$1,870,971	$430,336
Interest on funded debt	3,802,695	4,407,732	—605,037
TOTAL DEDUCTIONS FROM GROSS INCOME	$7,297,468	$7,569,802	—$272,383
NET INCOME	$7,352,038	$5,586,613	—$1,234,575

NEW ORLEANS, TEXAS & MEXICO.—*Bonds Authorized.*—The Interstate Commerce Commission has approved the sale of $3,752,000 first mortgage 5½ per cent bonds, series A, and $981,000 first mortgage 5 per cent bonds, series B, to Kuhn, Loeb & Co., at not less than 97 and 90 per cent of par, respectively. This amends a former decision approving sale at prices of 99 and 92. These bonds were offered to the public and sold by Kuhn, Loeb & Co. as reported in the *Railway Age* of April 4.

NEW ORLEANS, TEXAS & MEXICO.—*Missouri Pacific Offer for Stock.*—W. H. Williams, chairman of the board of the Missouri Pacific, has advertised to stockholders of the New Orleans, Texas & Mexico an offer to buy stock of the latter at $120, payable in Missouri Pacific 15-year, 7 per cent, sinking fund notes. His announcement gave details as follows:

The Missouri Pacific, which owns 113,167 shares, or more than 75 per cent of the outstanding 150,000 shares of stock of New Orleans, Texas & Mexico, offers to purchase additional shares of said stock at $120 per share, payable in Missouri Pacific 15-year 7 per cent sinking fund notes, at face value, with adjustment of accrued interest and dividends. Cash will be paid in lieu of notes for amounts less than $100.

The Missouri Pacific 15-year 7 per cent sinking fund notes will be issued under a trust indenture dated June 1, 1924, under which Irving Bank-Columbia Trust Company, is trustee, authorizing the issue of not more than $18,000,000 of notes against the deposit of stock of New Orleans, Texas & Mexico, at the rate of $120 per share deposited. The notes are a direct obligation of the Missouri Pacific, and are secured by pledge of all stock of New Orleans, Texas & Mexico Co. acquired by the Missouri Pacific through the issue of said notes. The notes are dated June 1, 1924, mature June 1, 1939, bear interest at the rate of 7 per cent per annum payable semi-annually on June 1 and December 1, are redeemable in whole or in part at any time at their face amount and accrued interest upon 60 days' prior notice, and will be issued in denominations of $100, $500 and $1,000. Temporary or definitive notes may be issued in the first instance. Definitive notes will be in coupon form, registerable as to principal only. The indenture provides for a Sinking Fund beginning September 1, 1925, in the amount of $1,200,000 per annum, such amount to be proportionately reduced in case less than $18,000,000 of notes are issued.

The attention of stockholders is called to the fact that while dividends are being paid on the stock of New Orleans, Texas & Mexico at the rate of $7.00 per share, the interest on the notes which stockholders will receive for each share of stock will amount to $8.40 per annum.

NEW YORK, CHICAGO & ST. LOUIS.—*Intervention in Merger Proceedings.*—The Interstate Commerce Commission has issued orders granting petitions of the American Short Line Railroad Association and of John S. Stanton, representing stockholders of the Hocking Valley, to be allowed to intervene in the proceedings before the commission on this company's application to acquire control of the Chesapeake & Ohio, Hocking Valley, Erie and Pere Marquette.

Chamber of Commerce Approves Merger.—Resolutions approving the merger of the Chesapeake & Ohio with the Nickel Plate were adopted by the directors of the Virginia State Chamber of Commerce at the first meeting of the new board in Lynchburg, Va., on April 2. The resolutions approve the merger on the grounds that it is for the best interests of all Virginia. After the meeting J. Scott Parrish, vice-president of the State Chamber, gave a statement reading in part as follows:

"If the Chesapeake & Ohio does not go into a consolidation of this character but is left alone it will find itself outside of the strong consolidations like the Pennsylvania, the New York Central and the Baltimore & Ohio lines, and simply have a line from the ocean to the lakes, in connection with the Hocking Valley and with no distributing lines such as it will get in connection with the Erie, the Pere Marquette and the existing Nickel Plate.

"The port of Hampton Roads will be greatly benefited by this consolidation. There is a great deal of territory that is tributary to Hampton Roads rather than to New York. We are assured by the representatives of the Van Sweringens that in considering the future their plans contemplate the building up not only of the coal traffic, which is so important a factor at Hampton Roads, but also merchandise business and all export and import business. A moment's reflection will show that if the Chesapeake & Ohio is left to itself, without some strong system supporting it, that it must be weaker so far as developing the port of Hampton Roads is concerned, than will be the case if it can be consolidated with other lines, making a strong system for the purpose of developing export and import business, because if these lines do not go with the Chesapeake & Ohio they will go with some of the other strong lines and necessarily divert business away from the Chesapeake &

(*Continued on page 963*)

Annual Report

Lehigh Valley Railroad Company—Seventy-First Report

PHILADELPHIA, Pa., April 1, 1925.

To the Stockholders of the Lehigh Valley Railroad Company:

The Board of Directors submits herewith a report of the business and condition of your Company for the year ended December 31, 1924.

Income

The Corporate Income for the year was as follows:

Total Operating Revenues		$76,374,805.25
Total Operating Expenses		60,967,968.63
Net Operating Revenue		$15,406,836.62
Railway Tax Accruals	$3,201,421.80	
Uncollectible Railway Revenues	15,664.50	
Equipment Rents—Net	944,061.23	
Joint Facility Rents—Net	*145,859.44*	
		4,015,288.09
Net Railway Operating Income		$11,391,548.53
Other Income		3,257,957.48
Total Income		$14,649,506.01
Deductions from Income		7,297,468.41
Net Income		$7,352,037.60

Profit and Loss

Balance December 31, 1923	$49,784,526.88
Transferred from Income	7,352,037.60
Miscellaneous Items—Net	2,730,950.07
	$59,867,514.55
Dividends	4,245,749.00
Balance December 31, 1924	$55,621,765.55

Your Company again has produced the highest gross revenue in its history, and at the same time operating expenses show a considerable decrease. A comparative income statement in detail will be found on page 15 (of the pamphlet report).

Financial

Taking advantage of a favorable market situation your Company sold $12,000,000 General Consolidated Mortgage 5 per cent. Bonds, using the proceeds and funds in its Treasury to redeem $15,000,000 Ten Year Collateral Trust 6 per cent. Bonds which were outstanding and would have matured on September 1, 1928. By this arrangement a saving was effected in the interest rate your Company pays on its funded debt and a bond issue having early maturity was retired advantageously. In addition, $1,000,000 Collateral Trust 4 per cent. Bonds matured during the year and were paid.

Your Company also sold $10,000,000 First Mortgage 5 per cent. Bonds of its subsidiary, the Lehigh Valley Harbor Terminal Railway Company, received in part payment for advances for construction purposes. This sale reimbursed the treasury of your Company for the payment of $10,400,000 of its Consolidated Mortgage Bonds at their maturity on December 1, 1923.

The Lehigh Valley has no important maturities of outstanding obligations to meet for the next fourteen years, when an issue of $8,500,000 becomes due, the refunding of which is provided for in the General Consolidated Mortgage.

The separation of The Lehigh Valley Coal Company from the Railroad Company was completed during the year. As a result of the transaction, stockholders of record March 15, 1924, received upon the payment of $1.00 a share, a Certificate of Interest in the Coal Company for each share of Railroad stock owned. These certificates had a market value at the close of the year of over $58,000,000. In addition, your Company received $14,968,925, which was used to reimburse the Treasury for various Capital Expenditures.

At the close of the year your Company held in its Treasury the following securities of its own issue, amounting to $10,905,000 no part of which is included in the unpledged securities amounting to $22,039,309.69 shown on page 10.

Collateral Trust 4% Bonds	$675,000.00
General Consolidated Mortgage Bonds	10,230,000.00
	$10,905,000.00

In addition, $17,400,000 General Consolidated Mortgage Bonds, $4,000,000 Lehigh-Buffalo Terminal Railway Corporation First Mortgage 4½ per cent. Gold Bonds and $2,600,000 Consolidated Real Estate Company Bonds will be returned to the Treasury as the result of the payment of the Ten Year Collateral Trust Bonds for which they had been under pledge as security.

Since September 30, 1903, the date of the General Consolidated Mortgage, expenditures of approximately $58,000,000 have been made for Additions and Betterments to the property of your Company and for other capital purposes against which no new or additional securities have been issued.

The bonds of the Lehigh Valley Railroad Company and its subsidiaries, in the hands of the public, as of December 31, 1924, amounted to $126,824,500, bearing an average interest rate of 4.61 per cent., comparing with an average interest rate of 4.71 last year.

Your Company has no equipment trust obligations.

Road and Equipment

Expenditures for Additions and Betterments to Road and Equipment, including expenditures on subsidiary properties, amounted during the year to $8,199,489.10, against which there were credits representing the sale or retirement of property of $2,652,578.26, resulting in a net charge to investment of $5,546,910.84.

Important improvements were made to the property to increase freight traffic and expedite its handling. The Industrial Branch in Jersey City, along the Hackensack River, was extended for about two-thirds of a mile, opening up new territory for development. Extensive additions were made to yard tracks at Allentown, Coxton, Manchester, P. & L. Junction and in the Tifft Farm development, at Buffalo. Freight handling facilities were enlarged at 124th Street Station, New York City; at National Docks and Greenville Stations, in Jersey City; Newark, Hillside, Allentown, Lehighton, Packerton, Hazleton, Mahanoy City, Wilkes-Barre, Tunkhannock, Owego, Geneva and Manchester. These included new tracks and platforms, ramps for handling automobiles, cranes, scales and additional tractors and trailers.

A three-cylinder locomotive, after extensive and thorough tests in which it demonstrated its value as a powerful and economical unit of motive power, was purchased by your Company. This locomotive, known as the Lehigh Valley type, has attracted most favorable attention and has been widely discussed in mechanical circles. So successful has it proven that five more three-cylinder locomotives were purchased and placed in service after the close of the year.

In addition to the three-cylinder locomotives, ten Pacific and forty Mikado engines were placed in service, as were twenty 12,000-gallon capacity locomotive tenders. At the close of the year the motive power of the Company was in the best condition in its history and well prepared to meet all demands.

Betterments to increase the efficient handling of locomotives were made at Oak Island, Wilkes Barre and Coxton and important machinery and tools were added to shop equipment at Easton, Ashmore, Packerton, Wilkes Barre, Coxton, Sayre, Auburn, Cortland, Buffalo and Suspension Bridge.

At the same time the work of bringing the freight cars of the Company to the highest standard was continued.

Three new steel dining cars and five steel coaches were ordered.

Twenty-five new milk cars, ordered during the preceding year, were received and are now in service.

Two tugs and two steel carfloats were purchased for the New York Harbor equipment of your Company.

Your Company, jointly with the Reading Company, has purchased the Ironton Railroad, eight miles in length, extending from Hokendauqua to Siegersville, Pa. This railroad serves an important cement-producing and industrial territory.

Jointly with the Delaware, Lackawanna & Western Railroad, your Company purchased the ship repair yards of the Brighton Dry Dock Company on New York Harbor. This plant is now being used for the repair of the floating equipment of the two railroads, affording increased facilities for the prompt and economical handling of this work.

Construction has begun of a new passenger station and freight terminal at Easton. A new passenger station, for the joint use of the Lehigh Valley and the Reading Company is under construction at Bethlehem.

The bridge building program, upon the completion of which the heaviest freight locomotives may be used over the entire line, was continued systematically. When a new viaduct at Easton and a new bridge in Phillipsburg, work on which is progressing, are finished, the largest locomotives may be operated from the coal docks at Perth Amboy to Buffalo and Suspension Bridge. Twenty bridges were replaced with new and heavier structures and four bridges were eliminated entirely and the openings filled. Two wooden overhead highway bridges were replaced by steel or concrete structures.

Track maintenance facilities were increased by the purchase of three locomotive cranes, eighteen motor cars and thirteen trailers.

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as well as by further purchases of pneumatic tie-tampers and concrete mixers.

A new gravity water supply system, including a 16,000,000 gallon storage reservoir and a 200,000 gallon distributing reservoir, was completed at Burdett and additional water facilities for locomotives were installed at Richards, Packerton, Ashmore and Gracedale.

General Remarks

Normal conditions generally prevailed and traffic moved steadily and in good volume throughout the year. Anthracite coal operations, however, were restricted to a degree by brief strikes of the miners on several occasions, rebuilding of an important breaker and also by a severe flood which compelled a temporary suspension of mining. Revenues of your Company from this traffic were reduced approximately $3,000,000, but this was more than offset by the growth of general merchandise business and as has been previously stated, the gross receipts from transportation by your Company in 1924 were the largest in its history.

The campaign to locate desirable industries on property owned by your Company, at Buffalo, on Lake Erie, adjacent to its Tifft Farm terminals, was continued. A thirteen-acre site there has been disposed of and a grain elevator of 1,200,000 bushels capacity, the first unit of a larger plant, is now in course of construction. Negotiations are pending which are expected to bring other industries to this desirable location.

As another site for future industrial development, your Company has acquired a tract of ninety-five acres, known as the Fitzpatrick Farm, adjacent to Irvington and Newark, in a growing manufacturing section. During the year this tract was surveyed and arrangements made for the necessary spur tracks into the site. Inquiries received from business concerns seeking locations for new plants indicate that this property will be quickly disposed of to industries which will contribute materially to the freight business of the railroad.

A total of 100 industries, seventy-four of them with direct track connections, were located along the Lehigh Valley during the year. More than three miles of spur tracks were built to serve these new industries. In the last three years more than 100 new industries a year have been located along the tracks of your Company.

Claremont Terminal, your Company's new freight terminal, on New York Bay, was successfully operated throughout the year. Forty-three ocean-going vessels, loaded with iron ore, discharged their cargoes at the ore dock, and the warehouse and open pier for the handling of heavy freight proved themselves an important contribution to the freight-handling facilities of the harbor. When property owned by your Company, at Claremont, is developed to its full extent, docking space of more than five and a half miles will be available to ocean-going vessels.

Seventy per cent. of all the ties in your Company's tracks are now creosoted, 391,801 having been installed during 1924.

Over 102 miles of 136-pound rail, the Company's standard and the heaviest rail used by any road, were laid during the year. Two-thirds of the main line is now laid with this heavy rail.

Tax accruals were $3,656,560.74, an increase of $805,185.41 over the preceding year. The principal increases were in New Jersey State Taxes ($322,355.56) and in Federal Income tax ($470,-021.82), the latter item, of course, reflecting the more favorable operating results of the year 1924.

There were no changes in the Board of Directors of your Company during 1924, but Mr. Daniel G. Reid, a member since January 18, 1910, died on January 17, 1925. Mr. S. Brinckerhoff Thorne was elected in Mr. Reid's place.

Special praise and thanks are due the rank and file of your Company's employees, as well as the officers, for the important contribution they made to the good showing of the year.

Respectfully,
E. E. LOOMIS,
President.

General Remarks to Owners of Railroad Securities

The year 1924 probably saw American railroads functioning at the highest point of efficiency in their history. A heavy volume of business was handled without congestion or car-shortage. Many costly and important additions were made to their properties during this period, which promise an even higher character of service for the future than has been possible in the past. Despite the steady traffic and the excellent conditions which have prevailed, however, it was possible for the railroads as a whole to earn only 4.33 per cent. upon their investment in properties used for transportation purposes, although the Interstate Commerce Commission, under the Transportation Act, has determined that not less than 5.75 per cent. shall be deemed a fair return.

This fact is particularly important, inasmuch as the superior service the railroads are now giving and the large volume of traffic they are handling are likely to convey the impression that the railroads of the country as a whole are in a prosperous condition and that reductions in rates are justified. In the last year, nineteen Class 1 railroads, ten of them in the East, operated at a deficit and many of the others failed to earn their interest charges. The fact that the rate of return on the investment for all the carriers combined was below the rate which has been determined upon as reasonable, indicates that the railroads are still far from being in a position to stand substantial reductions in their revenues. As a matter of fact, the return being earned by the carriers upon their investment is by no means of sufficient size to establish the credit with the investing public which is necessary if they are to finance the improvements required to keep pace with the growing commercial development of the country. The situation is one of profound concern to every student of transportation matters, especially in view of the fact that the successful operation of the carriers in the last year or so has given so many the impression that the railroads are no longer confronted with serious problems.

In the meanwhile, it is important to remember that the railroads are performing a great economic service for the people. Through the efficiency with which they are being operated, it is no longer necessary for industry and business to tie up great amounts of capital in stocks of materials and supplies. Unquestionably this has resulted in enormous savings to manufacturers and merchants and contributed to a vastly improved banking and credit situation. This state of affairs demonstrates once more the importance of the railroads as an economic factor in the country's commerce and emphasizes the necessity of keeping them solvent.

A situation to which the railroads must give constant attention is that of taxes. States and municipalities continue to appropriate large sums for various developments, many of which, while valuable in themselves and desirable from many standpoints, impose a heavy burden upon taxpayers. Citizens, and particularly railroad stockholders, should watch expenditures for public improvements with the same zeal with which they govern their own expenditures.

Legislative matters continued to present difficulties to the carriers. As was told in the last report, many bills seeking to hamper the railroads or to make their successful operation more difficult were introduced in Congress. Fortunately, the people as a whole, showed considerable interest in these matters and only one measure of this character was enacted into law.

Railroads, however, continue to be faced by difficulties growing out of the tendency of legislative bodies to regard many transportation problems as political rather than economic. This shows itself particularly in the inclination, upon the part of many members of Congress, to seek to solve these questions according to their individual views and to take away from the Interstate Commerce Commission the powers and duties heretofore given it. A legislative body has no machinery for determining adequately the justness or reasonableness of freight rates or passenger fares. Public regulation can be constructive only when these matters are determined after a full and calm study of all the pertinent facts by an impartial commission. To handle them otherwise makes them political questions. It is to be hoped that, upon every opportunity which presents itself, citizens will take it upon themselves to urge their representatives in the Senate and House to leave the Interstate Commerce Commission free and untrammeled in the duties which have been assigned to it.

E. E. LOOMIS,
President.

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(*Continued from page* 961)

Ohio, so that instead of this consolidation hurting Hampton Roads it is bound to do just the contrary. All the reasons which have heretofore influenced the management of the Chesapeake & Ohio towards the development of traffic through Hampton Roads will apply with new force to the new system, and in addition there are other compelling reasons.

"The distance from points like Marion and Telodo, Ohio, and other western points is shorter to Hampton Roads than to New York, via the Van Sweringen lines, and these distances are in many cases shorter and in many cases compare favorably with the distances via other lines like the Baltimore & Ohio, the Pennsylvania and the New York Central to tidewater from interior points.

"The Chesapeake & Ohio has the most favorable grades against eastbound traffic of any railroad crossing the Appalachian Divide. The cost of transportation via the Chesapeake & Ohio, on account of the better grade line and other conditions, is cheaper than the cost via other lines. The cost of handling freight to and from vessels at the port of Hampton Roads, even with the present facilities, which can and will be improved, is much lower than the cost of such handling at the port of New York.

"Through fast freight lines will be established via the consolidated lines, giving closely connected fast freight schedules. This fast freight service, which the Chesapeake & Ohio is running today practically 100 per cent on time, is bound to develop the cities of Virginia along its lines very materially, particularly the cities of Covington, Clifton Forge, Lynchburg, Staunton, Charlottesville, Richmond, Newport News and Norfolk."

Minority Stockholders Continue Fight.—A statement signed by George Cole Scott, chairman, and others of the Richmond C. & O. stockholders' protective committee says that the committee proposes immediately to cause to be instituted in the Chancery Court of the city of Richmond a suit in equity as the next step in opposi-

tion to the leasing of the Chesapeake & Ohio to the Nickel Plate. The committee also proposes to file a petition to intervene in the hearings before the Interstate Commerce Commission.

Intervention Allowed.—The Interstate Commerce Commission has permitted the Richmond committee to intervene in the Nickel Plate merger proceedings.

NEW YORK CENTRAL.—*Bonds Converted.*—About $82,500,000 of the $100,000,000 debenture 6s of the New York Central had been presented for conversion into stock at the close of business April 1.

NEW YORK, NEW HAVEN & HARTFORD.—*Refunding.*—A statement issued from the executive offices of the New Haven describes the success of the road's recent refinancing and reads in part as follows:

"The result of the recent financing of the New Haven Railroad was phenomenal.

"The company needed $23,000,000 to meet the so-called Foreign Loan due April 1, 1925. In June, 1924, the Manufacturers' Association of Connecticut voluntarily interested themselves in the matter. . . . The industries of Connecticut got the industries of Massachusetts and Rhode Island also interested in the matter, and the result of their work, together with that of others, was that the company finally obtained subscriptions to the new loan of over 31½ million dollars from industries, banks, bankers, trust companies, insurance companies, employees, stockholders and directors, and all of this money was obtained without commission or underwriting charge.

"The executives of the company and the company itself appreciate fully the results obtained and feel under great obligations to all who contributed to the success, especially to the industries mentioned, to the banks, bankers and trust companies, who contributed liberally without compensation, and employees, about 5,000 of whom subscribed to nearly one million dollars of the new bonds."

NEW YORK, ONTARIO & WESTERN.—1924 *Earnings.*—Annual report for 1924 shows net earnings after charges of $627,500 equivalent to $1.08 a share on the $58,113,983 common stock. Earnings in 1923 were $122,785 equivalent to 21 cents a share. Selected items from the income account follow:

NEW YORK, ONTARIO & WESTERN

	1924	1923
Average mileage operated	.....	.....
Railway operating revenues	$13,666,132	$13,937,366
Maintenance of way	$1,988,991	$1,967,841
Maintenance of equipment	2,471,934	3,194,463
Transportation	5,886,130	6,351,597
Total operating expenses	$11,013,306	$12,158,349
Net revenue from operations	$2,652,826	$1,779,017
Railway tax accruals	477,249	408,696
Railway operating income	$2,173,971	$1,368,425
Non-operating income	$363,289	$536,436
Gross income	$2,537,260	$1,904,861
Deductions from gross income	$1,909,760	$1,782,076
Net income	$627,500	$122,785

NORTHERN PACIFIC.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority for an issue of $3,525,000 of 4½ per cent equipment trust certificates to be sold to J. P. Morgan & Co., and the First National Bank at not less than 96.

PENNSYLVANIA.—*Merger of Subsidiaries.*—The Interstate Commerce Commission has made public a tentative report proposed by Examiners C. E. Boles and A. C. Devoe, recommending a finding by the commission that the public convenience and necessity have not been shown to require the operation by the Pennsylvania, Ohio & Detroit of certain subsidiaries in Ohio and Michigan which it was organized to consolidate by issuing its securities in exchange for those of the Cincinnati, Lebanon & Northern; Cleveland, Akron & Cincinnati; Toledo, Columbus & Ohio River; Manufacturers' Railway (of Toledo); and the Pennsylvania-Detroit. They also recommended a finding that a certificate is not necessary for the Pennsylvania to operate the roads, which it now operates under lease except the Manufacturers' Railway, which operates its own railroad. Finding is also recommended that the proposed issue of stock by the Pennsylvania, Ohio & Detroit is not for a lawful object within its corporate purposes. The consolidated company sought to issue $28,410,000 of stock in exchange for that of the other companies and also to issue and sell $3,100,000 of stock for its capital purposes. The Pennsylvania proposed to exchange the stock of the subsidiaries which it holds for that of the consolidated company and to lease the property of that company. The report says the Pennsylvania needs no certificate to continue the operation and if it desires to operate the Manufacturers' Railway under lease it should apply for that authority, but that the consolidated company proposes to engage in interstate commerce only to the extent of holding the legal title to the properties and to issue a certificate for operation would be a vain and idle function.

SOUTHERN PACIFIC.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to pledge and repledge as collateral for notes and/or sell $6,425,000 of Southern Pacific Railroad first refunding mortgage 4 per cent bonds, now held in the treasury.

ST. LOUIS & HANNIBAL.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $251,280 of 6 per cent first mortgage bonds, to be delivered to John Ringling in payment for advances; $398,719 of bonds to be sold at par, and $250,000 to be issued to the preferred stockholders in exchange for their stock.

ST. LOUIS, SAN FRANCISCO & TEXAS.—*Tentative Valuation.*—The Interstate Commerce Commission has issued a tentative valuation report as of June 30, 1918, in which the final value of the property owned is placed at $2.786,600 and that of the property used at $2,994,986.

SUNCOOK VALLEY.—*Authorized to Operate Line.*—The Interstate Commerce Commission has issued a certificate of public convenience and necessity authorizing this company to take over the Suncook Valley Extension Branch, 4.57 miles, and to operate this and the company's own 17½ mile line. The company's line extends from Allenstown, N. H., to Pittsfield, and with the additional mileage to Center Barnstead. This mileage was formerly operated by the Boston & Maine under lease but was given up by the latter company last September, the lease having expired in 1912 and having been extended from time to time thereafter.

WESTERN PACIFIC RAILROAD CORPORATION.—*Earnings.*—The report of earnings for eighteen months ended December 31, 1924, shows net income of $2,905,110 after taxes and charges, equivalent after preferred dividends to $1.15 a share earned on $47,500,000 common stock.

Income account of Western Pacific Railroad Corporation for eighteen months ended December 31, 1924, follows:

Gross income	$3,515,109
Expenses, interest, tax, depreciation	609,999
Net income	$2,905,110
Preferred dividends paid	2,356,605
Preferred dividend payable January, 1925	392,768
Surplus	$155,737

The Western Pacific Railroad Corporation owns all of the stock of the Western Pacific Railroad Company and one-half the common stock of the Denver & Rio Grande Western. Dividends on the preferred stock are at the rate of 5 per cent.

Dividends Declared

Atchison, Topeka & Santa Fe.—Common, $1.75, quarterly, payable June 1 to holders of record May 1.

Cincinnati, Sandusky & Cleveland.—Preferred, $1.50, semi-annually, payable May 1 to holders of record April 15.

Mahoning Coal R. R.—Common, $12.50, payable May 1 to holders of record April 15.

Morris & Essex Extension.—2 per cent, payable May 1 to holders of record April 25.

Passaic & Delaware Extension.—2 per cent, payable May 1 to holders of record April 25.

Syracuse, Binghamton & New York.—3 per cent, quarterly, payable May 1 to holders of record April 25.

Utica, Chenango & Susquehanna Valley.—3 per cent, payable May 1 to holders of record April 13.

Trend of Railway Stock and Bond Prices

	April 8	Last Week	Last Year
Average price of 20 representative railway stocks	77.65	76.87	63.95
Average price of 20 representative railway bonds	89.99	89.44	85.98

SOUTHERN PACIFIC.—A contract has been awarded to the Utah Construction Company, San Francisco, Cal., for the construction of 32 miles of the new 115-mile line from Hassayampa, Ariz., to Dome.

UNION PACIFIC.—Plans are reported to have been prepared for the construction of an enginehouse with repair facilities at Twin Falls, Idaho.

Railway Officers

Executive

L. E. Faulkner has been elected vice-president of the Mississippi Central in addition to his present duties as general manager, with office at Hattiesburg, Miss.

Jules S. Bache, vice-president of the Ann Arbor, has been elected president, succeeding the late Newman Erb. **W. D. Hutton** has been elected vice-president, succeeding Mr. Bache.

J. E. Anderson, assistant to the president of the Gulf Coast Lines, with headquarters at Houston, Texas, has been appointed assistant to the executive vice-president, with the same headquarters.

George M. Crowson, editor of the Illinois Central Magazine, has been promoted to assistant to the vice-president in charge of public relations, with headquarters at Chicago, a newly created position. Mr. Crowson was born on February 9, 1896, at Pickering, Mo. After completing his high school education he entered newspaper work at Maryville, Mo., in 1915. His newspaper work was interrupted for one year during the war when he served in the army, returning afterward to the newspaper at Maryville. He was later employed in newspaper work in St. Joseph, Mo., where he remained until 1920. In that year he entered railway service on the Illinois Central at Chicago as assistant to the general claim agent, his work having to do for the most part with publicity and the publication of the Illinois Central Magazine. He was appointed editor of the magazine in May, 1921, and continued in that capacity until his recent promotion to assistant to the vice-president.

G. M. Crowson

Financial, Legal and Accounting

H. Hurst, assistant treasurer of the Pennsylvania, with headquarters at St. Louis, Mo., has been transferred to Pittsburgh, Pa., the office of the treasury department at St. Louis having been abolished.

Elmer Westlake, who has been connected with the legal department of the Southern Pacific, has been appointed commerce counsel of the Atchison, Topeka & Santa Fe, with headquarters at Chicago.

E. M. Willis, assistant treasurer and assistant secretary of the Northern Pacific, with headquarters at New York, has been promoted to executive assistant, with the same headquarters. **F. G. Hollender** has been appointed assistant secretary and assistant treasurer, with headquarters at New York, succeeding Mr. Willis.

L. J. Hackney, general counsel of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Cincinnati, Ohio, has retired from active service but will continue to act as counsel of the railway in a consulting capacity. **H. N. Quigley,** general attorney, has been promoted to general counsel, with headquarters at Cincinnati, succeeding Mr. Hackney. Mr. Hackney was born on March 29, 1855, in Indiana, and entered railway service in January, 1899, in the legal department of the Cleveland, Cincinnati, Chicago & St. Louis. After serving in various capacities, including that of assistant general counsel, he was promoted to general counsel in July, 1905, and held that position until his recent retirement.

Harry G. Snelling, assistant general treasurer of the New York Central Lines, has been appointed to the position of general treasurer, made vacant by the death of Milton S. Barger on March 5. **Rush N. Harry,** treasurer of the Cleveland, Cincinnati, Chicago & St. Louis since 1909, has been appointed assistant general treasurer, succeeding Mr. Snelling, and **A. P. Burke** of Cincinnati has been appointed treasurer of the Big Four to succeed Mr. Harry. Mr. Snelling was born on September 4, 1865, at Stamford, Conn., and received his education in public and private schools. He entered railway service in 1882, as a clerk in the treasurer's office of the Michigan Central, which position he held until 1899, when he became transfer agent of the Canada Southern and the New York, Chicago & St. Louis. In 1904, he became transfer agent of the New York Central Lines west of Buffalo, and in 1906 was appointed assistant treasurer of the same lines. This position he held until 1918, and from that time until 1920, during federal control, he was assistant treasurer of the New York Central and affiliated lines. In 1920 he became assistant general treasurer of all the New York Central Lines, which position he held until his recent promotion.

Harry G. Snelling

Operating

T. L. Roberts has been appointed special representative of the general manager of the Atchison, Topeka & Santa Fe Coast lines, with headquarters at Los Angeles, Cal.

F. J. Gavin, general superintendent of the Lake district of the Great Northern, with headquarters at Duluth, Minn., has been given extended jurisdiction to include the Eastern district.

R. W. Watts, chief clerk to the division superintendent of the Illinois Central, with headquarters at Chicago, has been promoted to trainmaster at Fordham Yards, Chicago, succeeding J. B. O'Reer, who has been assigned to other duties.

Oscar Revling has been appointed acting trainmaster of the Pasco division of the Northern Pacific, with headquarters at Yakima, Wash., succeeding D. S. Colby, who has been promoted to acting assistant superintendent of the Pasco division, with headquarters at Billings, Mont.

F. W. Curtis, superintendent of the Wisconsin & Peninsula division of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn., has been appointed superintendent of the newly created Twin Cities Terminal division, with the same headquarters, the Wisconsin & Peninsula division having been divided into two parts. **W. Corbett** has been appointed superintendent of the portion of the Wisconsin & Peninsula division outside of the Twin Cities Terminal, with headquarters at Weyerhauser, Wis.

Traffic

R. T. Boteler has been appointed general agent of the Louisiana & Arkansas, with headquarters at Detroit, Mich.

A. T. Patek has been appointed assistant general freight agent of the St. Louis-San Francisco, with headquarters at St. Louis, Mo.

G. G. Koppenstette, division passenger agent of the Wabash, with headquarters at Decatur, Ill., has been transferred to Buffalo, N. Y., succeeding **H. L. Purdy,** deceased. **G. N. Lovell** has been appointed division passenger agent at Decatur, succeeding Mr. Koppenstette.

C. P. Bradley, traveling passenger agent of the Chicago, Rock Island & Pacific, with headquarters at Atlanta, Ga., has been promoted to district passenger agent, with the same headquarters, a newly created position. **H. E. Hurst,** traveling freight and passenger agent, with headquarters at Tulsa, Okla., has been promoted to general agent, with the same headquarters, also a newly created position.

Mechanical

H. H. Carrick, master mechanic on the Southern Pacific, with headquarters at Tracy, Cal., has been promoted to superintendent of shops at Los Angeles, Cal., succeeding W. A. Rogers, deceased.

E. H. Carlson has been appointed acting master mechanic of the Montana division of the Northern Pacific, with headquarters at Livingston, Mont., succeeding R. P. Blake, who has been temporarily assigned to other duties.

Engineering, Maintenance of Way and Signaling

M. E. Thomas, division engineer of the Iowa division of the Chicago & North Western, with headquarters at Boone, Iowa, has been given jurisdiction also over the Iowa and Minnesota division, the engineering offices of the Iowa and Minnesota division and the Iowa division having been consolidated. **J. A. Dyer,** division engineer of the Iowa and Minnesota division, has been transferred to the Southern Illinois and South Pekin division, with headquarters at South Pekin, Ill., succeeding H. G. Lennox, transferred. **E. L. Mead,** division engineer of the Wyoming division, with headquarters at Casper, Wyo., has been transferred to Chadron, Neb., with jurisdiction over both the Wyoming division and the Black Hills division, the engineering offices of these having been consolidated. **D. K. Van Ingen,** division engineer of the Black Hills division, has been assigned to other duties. **H. M. Spahr,** division engineer of the Northern Wisconsin division, with headquarters at Green Bay, Wis., has been given jurisdiction also over the Lake Shore division, the engineering offices of these having been consolidated. **W. T. Main,** division engineer of the Lake Shore division, has been granted leave of absence.

Obituary

Robert Wilson Mitchener, general superintendent of the New York, Chicago, & St. Louis, with headquarters at Cleveland, Ohio, died at Ft. Wayne, Ind., on April 3. He was taken suddenly ill in his business car en route to Chicago in the morning of that day and died of heart failure early the same evening. Mr. Mitchener was born at New Philadelphia, Ohio, on March 7, 1857. He entered railway service in 1875, and until 1878 was operator and agent of the Cleveland, Lorain & Wheeling (now a part of the Baltimore & Ohio). From 1878 to 1880 he was clerk to the superintendent and train dispatcher of the same road. From 1880 to 1888 he was train dispatcher for the Cleveland, Columbus, Cincinnati & Indianapolis (now a part of the Cleveland, Cincinnati, Chicago & St. Louis). In 1888 and 1889 he was chief dispatcher of the Cleveland, Lorain & Wheeling. In 1889 he took service with the New York, Chicago & St. Louis as chief dispatcher. In 1894 he was promoted to trainmaster and, in 1905, he became superintendent of telegraph. In 1908 he was appointed superintendent of the Cleveland division, and, in 1912, he was promoted to superintendent of transportation. Mr. Mitchener became general superintendent in June, 1917, and held this position until the time of his death.

R. W. Mitchener

G. S. Fernald, general counsel of the Pullman Company, with headquarters at Chicago, died at Pass Christian, Miss., on April 7, of heart disease.

J. E. Terry, formerly general freight agent of the Cleveland, Lorain & Wheeling and later assistant coal and coke agent of its successor, the Baltimore & Ohio, died at St. Petersburg, Fla., recently.

Thomas L. Harkness, paymaster of the Missouri Pacific, died in St. Louis, Mo., on April 3 following a week's illness with pneumonia. Mr. Harkness was 76 years old, had been in the service of the Missouri Pacific for over 51 years, and had been paymaster for the past 28 years.

SIR WILLIAM ACWORTH

Sir William Mitchell Acworth, K. C. S. I., died in London on April 2, after an illness of about a month. Sir William, as is generally known, was a railway economist whose abilities were recognized throughout the entire world. He was from time to time a contributor to the columns of the *Railway Age* and its predecessors. Sir William was, by training, a lawyer. Born on November 22, 1850, in Bath, he attended Christ Church College, Oxford University, and was graduated with the degree of M.A. in 1875. He became interested in railway problems relatively early in his career and his first book on the subject, Railways of England, appeared in 1899. He served as a member of many Royal commissions and other investigating committees for the British railways. In 1916 he was a member of the Royal Commission for Inquiry into the Canadian Railways, and two years later served similarly on a railway investigation committee for Southern Rhodesia. At the conclusion of his service on the Canadian commission he appeared before the Joint Congressional Committee on Interstate Commerce in Washington to testify regarding the operations of government-owned railways. Sir William was chairman of the committee which investigated railway conditions in India in 1921, and in 1923 he acted for the League of Nations in working out a plan for the reorganization of the Austrian Federal Railways on the lines of a private corporation. He was one of the two experts who drafted the plan for reconstituting the government-owned railways of Germany as a semi-private corporation, which plan became an integral part of the Dawes report on German reparations and which set up the regime under which the German railways are now operating. Other works on railway subjects by Sir William Acworth, in addition to the one mentioned above, are: Railways of Scotland (1890); Railways and Traders (1891); Elements of Railway Economics (1905); State Railway Ownership (1920). His Elements of Railway Economics was recently revised and reissued. Sir William was created a Knight in 1921 and the following year received the decoration of Knight Commander of the Star of India.

Sir William M. Acworth, K.C.S.I.

GASOLINE MOTOR CARS operated by railways in Kansas are exempt from the two-cents per gallon gasoline tax now in effect in that state, under a ruling by the State Public Service Commission.